

***United States Court of Appeals
for the Second Circuit***



**SUPPLEMENTAL
APPENDIX**

ORIGINAL

4114

77-6190 & 77-6195

United States Court of Appeals
For the Second Circuit.

IN THE MATTER
OF

The Complaint of TUG OCEAN PRINCE, INC., and RED STAR TOWING & TRANSPORTATION CO., as Owner and Charterer of the Tug "Ocean Prince" for Exoneration from or Limitation of Liability,
Plaintiffs and Third Party Plaintiffs-
Appellees and Cross-Appellants,
v.

UNITED STATES OF AMERICA,
Third Party Defendant-Appellee.

UNITED STATES OF AMERICA,
Plaintiff-Appellant,
against

PITTSTON MARINE TRANSPORT CORP.,
Defendant-Appellee,

TUG OCEAN PRINCE, INC., and RED STAR TOWING & TRANSPORTATION CO.,
Defendants-Appellees.

ON APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE SOUTHERN DISTRICT OF NEW YORK.

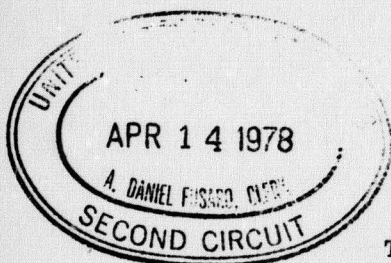
SUPPLEMENTAL APPENDIX. EXHIBITS

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RED STAR'S EXHIBIT 1.

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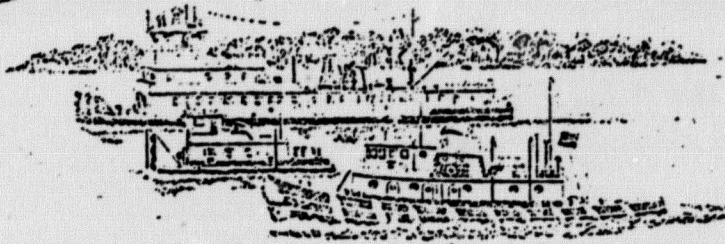
DEPARTMENT OF TRANSPORTATION

ISSUE NUMBER

03229

1-1

UNITED STATES COAST GUARD



RECEIVED

This is to certify that WALTER ERNEST REIMER
 having been duly examined and found competent by the
 undersigned, is licensed to serve as Operator
 of Uninspected Towing Vessels upon OCEANS, NOT MORE THAN 200
MILES OFFSHORE, AND THE INLAND WATERS OF THE UNITED STATES, NOT INCLUDING
WESTERN RIVERS AND THE GREAT LAKES

This license is valid for 5 years and will expire on the 12TH
 day of JUNE, 1978.
 Given under my hand this 12TH day of JUNE, 1973.

JACKSONVILLE, FLORIDA

ROBERT O. MIDGETT, Lieutenant, USCG.

By direction of

Officer in Charge of Marine Inspection

Additional Endorsements: Marine Inspection Office, Jacksonville, Florida, 8 August 1973

--ALSO AUTHORIZED TO SERVE AS OPERATOR OF UNINSPECTED TOWING VESSELS UPON THE--
--WESTERN RIVERS.

John W. Acuff
JOHN W. ACUFF, Lieutenant, USCG
By direction of Officer in Charge
Marine Inspection

Marine Inspection Office, Jacksonville, Florida, 10 August 1973

--ALSO AUTHORIZED TO SERVE AS SECOND CLASS OPERATOR OF UNINSPECTED TOWING--
--VESSELS UPON THE GREAT LAKES.

Robert O. Midgett
ROBERT O. MIDGETT, Lieutenant, USCG
By direction of Officer in Charge
Marine Inspection

Signature of Licensee *Walter Ernest Reimer*

Z or Book Number Z-754900 -- Social Security No. 110-24-0158

Date of Birth 23 December 1929

Place of Birth New York, N. Y.

Present Address 283 Baisden Road, Jacksonville, Florida 32218

PROOF OF CITIZENSHIP PRESENTED TO OCMI, JACKSONVILLE, FLORIDA, 20 APRIL 1973.

LEFT THUMB

RED STAR'S EXHIBIT 2.

REINDEXED
COAST
4/27/76

LIGHT LIST

This publication contains a list of lights, fog signals, buoys, daybeacons, lightships, radiobeacons, and loran stations.

Volume I

ATLANTIC COAST

ST. CROIX RIVER, MAINE TO LITTLE RIVER, SOUTH CAROLINA

Plans for air defense of the continental United States may require temporary suspension of the operation of certain electronic aids to navigation with little or no advance notice.

1972

CG-158

RED STAR'S EXHIBIT 2

PREFACE

Lights and other marine aids to navigation maintained by or under authority of the United States Coast Guard on the Atlantic and Gulf Coasts of the United States, including the United States West Indies are listed in two volumes, one for the First, Third and Fifth Coast Guard districts, and one for the Seventh and Eighth Coast Guard districts.

These lists, published annually, are intended to furnish more complete information concerning aids to navigation than can be conveniently shown on charts. They are not intended to be used in navigation in the place of charts and coast pilots and should not be so used. The charts should be consulted for the location of all aids to navigation. It may be dangerous to use aids to navigation without reference to charts.

These lists are corrected to date of publication shown on the title page. Changes made in aids to navigation during the year are published in Notices to Mariners. Important changes in aids are also broadcast by the United States Coast Guard through Naval or Coast Guard radio stations and other means. The navigator should keep his Light Lists, as well as his charts and other nautical publications, corrected from these notices and should consult all notices issued after the date of publication of the lists.

Recommendations concerning changes or improvements in aids to navigation, or reports of aids no longer needed, should be mailed to the address of the Commander of the Coast Guard district in which the aids are located.

Mariners and others are requested to bring to the attention of the Commandant (WAN-4/74), United States Coast Guard, Washington, D.C., 20590, any apparent errors or omissions in these lists.

The 1972 Edition supersedes the 1971 Edition and is corrected through Local Notice to Mariners issued by the 1st, 3rd and 5th U. S. Coast Guard District Commanders through October 15, 1971, and Notice to Mariners No. 45 of November 13, 1971, published weekly by the U. S. Naval Oceanographic Office.

RED STAR'S EXHIBIT 2

NOTICES TO MARINERS

Purpose. By means of Notices to Mariners, the Coast Guard disseminates information concerning establishments, changes and discontinuances of aids to navigation in the United States, its territories and possessions. Reports of channel conditions, obstructions, menaces to navigation, danger areas, etc., are also included in Notices to Mariners. These notices are essential to all navigators for the purpose of keeping lists of light and other marine aids, nautical charts Coast Pilots and other nautical publications currently corrected.

Local Notices to Mariners are issued by each District Commander. They include changes and deficiencies in aids to navigation within the area of each Coast Guard district. These notices are published as required, usually weekly. If only local information is required, the notices issued by the various District Commanders will serve the needs of local navigators. They may be obtained, free of charge, by making request to the appropriate District Commander.

Weekly Notice to Mariners (Worldwide coverage) are prepared jointly by the U. S. Naval Oceanographic Office, the National Ocean Survey and the U. S. Coast Guard and published weekly by the U. S. Naval Oceanographic Office. They include changes in aids to navigation in assembled form for the 1st, 3rd, 5th, 7th, 8th, 11th, 12th, 13th, 14th, and 17th Coast Guard Districts and the Greater Antilles Sections. Foreign marine information is also included in these notices. These notices are intended for mariners and others who have a definite need for them in connection with extended sea-going activities or those operating in several Coast Guard Districts. These notices may be obtained, free of charge, by making request to the Commander, U. S. Naval Oceanographic Office, Washington, D. C. 20390.

Weekly Notices to Mariners (Great Lakes Edition) are published weekly by the Commander, 9th Coast Guard District. These notices may be obtained, free of charge, by making request to Commander, 9th Coast Guard District, New Federal Office Building, 1240 East 9th Street, Cleveland, Ohio 44199.

Marine broadcast Notices to Mariners are made by the Coast Guard through Coast Guard, Navy and some commercial radio stations to report deficiencies and changes in aids to navigation of importance. Radio stations broadcasting marine information are listed in "Radio Navigational Aids (NO-117A and B)" published by the U. S. Naval Oceanographic Office.

Temporary deficiencies in aids to navigation are not published in Weekly Notices to Mariners when it is known that the defects will be corrected promptly.

Change of address. Persons receiving Notices to Mariners are requested to notify the appropriate agency of any change in address, or when Notices to Mariners are no longer required. Both new and old addresses should be given in case of change of address.

Obtaining single copies of Notices to Mariners. Single copies of Notices to Mariners may be obtained or consulted at the offices of the District Commanders, the National Ocean Survey District Offices, the Branch Oceanographic Offices, or other agencies distributing marine information.

EXCERPTS FROM REGULATIONS PERTAINING TO AIDS TO NAVIGATION MAINTAINED BY OR UNDER AUTHORITY OF THE UNITED STATES COAST GUARD (REFERENCE: 33CFR, SUBCHAPTER C AND PART 80 OF SUBCHAPTER D).

Marking of wrecks. When a vessel, raft, or other craft is wrecked and sunk, accidentally or otherwise, in the navigable waters of the United States, the owner thereof has a non-delegable statutory duty to mark immediately such sunken wreck with a buoy or daymark during the day and a lighted lantern at night, and to

maintain these required markings until the sunken craft is removed or abandoned, or abandonment is otherwise determined by the Corps of Engineers. Such markings shall conform to the lateral system of buoyage characteristics: *provided*, that until the owner has the opportunity to establish such standard markings he shall maintain the most suitable markings available under the circumstances which will warn the navigator of the sunken wreck.

The owner, agent, master, or person in charge of such vessel shall notify the nearest United States Coast Guard Marine Inspection Office of the casualty as soon as possible, and in addition, shall advise of the action he is taking to establish proper markings, giving the following information: (a) Name and description of sunken wreck; (b) Accurate location of wreck; (c) Depth of water over wreck; (d) Location and type of marking established, including color and shape of daymark or buoy, and color and characteristic of light.

Private aids to navigation. No person, public body, or instrumentality not under the control of the Commandant, exclusive of the Armed Forces, shall establish, erect, or maintain in the navigable waters of the United States any aid to maritime navigation, without first obtaining permission to do so from the Commandant, nor shall any person, public body, or instrumentality, change, move, or discontinue any private aids to navigation so authorized without first obtaining permission to do so from the Commandant.

Lighting of bridges. All persons owning, occupying, or operating bridges over the navigable waters of the United States shall maintain at their own expense such lights and other signals required for the safety of marine navigation as may be prescribed by the Commandant, U. S. Coast Guard and, on any international bridge constructed after March 23, 1906, such additional signals as may be prescribed by the Commandant, U. S. Coast Guard.

Marking of structures. Any structure, including mooring plants or buoys, in or over the navigable waters of the United States shall display the lights and other signals for the protection of maritime navigation as may be prescribed by the Commandant of the Coast Guard. Any owner, or operator, of a structure excluding an agency of the United States, who violates any of the rules and regulations prescribed hereunder, commits a misdemeanor and shall be punished, upon conviction thereof, by a fine of not exceeding \$100 for each day during which such violation continues. The prescribed lights and signals shall be installed, maintained, and operated by and at the expense of the owner, or operator, who shall, after obtaining a Corps of Engineers' permit authorizing construction of the structure, apply to the District Commander having jurisdiction over the waters in which the work will be executed for determination of the lights and other signals to be displayed. Regulations describing the lights or other signals required to mark any work or obstruction, may or may not be published. If no regulation exists, each case shall be considered individually by the District Commander who will prescribe such lights and signals as he may consider necessary for the safety of navigation. The characteristics of lights and signals shall comply as nearly as possible to the United States lateral system of buoyage.

Interference with aids to navigation. No person, excluding the armed forces, shall obstruct or interfere with any aid to navigation established and maintained by or under the authority of the Coast Guard.

Collision with or damage to aids to navigation. No person shall take possession of or make use of for any purpose or build upon, alter, deface, destroy, move, injure, obstruct by fastening vessels thereto or otherwise, or in any manner whatever impair the usefulness of any aid to navigation established and maintained by the United States.

Whenever any vessel collides with an aid to navigation established and maintained by the United States or any private aid to navigation or is connected with any such collision, it shall be the duty of the person in charge of such vessel to report the accident to the nearest Officer in Charge, Marine Inspection, United States Coast Guard.

RED STAR'S EXHIBIT 2

Warning signals for Coast Guard vessels while handling or servicing aids to navigation:

Inland waters (Inland Rules):

DAY—Two orange and white vertically striped balls in a vertical line not less than 3 feet nor more than 6 feet apart displayed from the yardarm.

NIGHT—Two red lights in a vertical line not less than 3 feet nor more than 6 apart. Vessels, with or without tows, passing Coast Guard vessels displaying this signal shall reduce their speed sufficiently to insure the safety of both vessels, and when passing within 200 feet of the Coast Guard vessel displaying this signal, their speed shall not exceed 5 miles per hour.

HIGH SEAS (International Rules):

DAY—Three shapes not less than 2 feet in width in a vertical line not less than 6 feet apart, the highest and lowest being red globular shapes and the middle being a white diamond shape.

NIGHT—Three lights in a vertical line not less than 6 feet apart, the highest and lowest being red and the middle being white in color.

OTHER LIGHT LISTS PUBLISHED BY COAST GUARD

VOLUME II, ATLANTIC and GULF COAST, describing aids to navigation in United States waters from Little River, South Carolina to Rio Grande River, Texas and the Greater Antilles.

VOLUME III, PACIFIC COAST AND PACIFIC ISLANDS, describing aids to navigation in United States waters on the Pacific Coast and outlying Pacific Islands. For the convenience of mariners there are also included the lighted aids on the coast of British Columbia, maintained by Canada.

VOLUME IV, GREAT LAKES, describing aids to navigation maintained by the United States Coast Guard, and the lighted aids maintained by Canada, on the Great Lakes and the St. Lawrence River, above St. Regis River.

VOLUME V, MISSISSIPPI RIVER SYSTEM, describing aids to navigation on the Mississippi and Ohio Rivers and navigable tributaries.

All Coast Guard light lists are for sale by the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402, and by sales agencies as listed in the Weekly Notices to Mariners.

Charts, Coast Pilots, Tide Tables, and Current Tables of the coasts covered by Coast Guard Light Lists of the Atlantic Gulf and Pacific Coasts and the Great Lakes are published by the National Ocean Survey, Washington Science Center, Rockville, Md. 20852, and are for sale by that agency and by sales agencies as listed in the Weekly Notices to Mariners. Maps and related publications for the Mississippi River System covered by the Mississippi and Ohio Rivers Light List are published by the various District Engineers, United States Army, located in the area.

**** CAUTIONARY NOTES CONCERNING AIDS TO NAVIGATION ****

REPORTING DEFECTS IN AIDS TO NAVIGATION

Experienced mariners realize that the Coast Guard cannot keep the thousands of aids to navigation comprising the federal system under simultaneous and continuous observation and that, for this reason, it is impossible to maintain every buoy, daybeacon, light, fog signal and other aid operating properly and on its charted position at all times. Therefore, the safety of the mariner and that of all persons embarked or serving to vessels will be enhanced if every person who discovers an aid to be missing, sunk, capsized, or damaged, or who observes a defect in the position or characteristic of any aid, will promptly notify the nearest Coast Guard District Commander of the fact. Radio messages should be prefixed "Coast Guard" and transmitted directly to one of the United States Government shore radio stations listed under "Activity" in Section 400B of

Radio Navigational Aids NO-117 for relay to the Coast Guard District Commander. If the radio call sign of the nearest United States Government radio shore station is not known, radio-telegraph communication may be established by the use of the general call "NCG" on the frequency of 500 kilohertz. Merchant ships may send messages relating to defects noted in aids to navigation through commercial facilities only when they are unable to contact a United States Government shore radio station. Charges for these messages will be accepted "collect" by the Coast Guard.

Suggestions for improvement in the system of aids should be submitted by mail to the Commandant, U. S. Coast Guard, Washington, D. C. 20590.

Some of the deficiencies, derangements, and phenomena that occasionally occur and which are potential sources of danger to the mariner, and certain situations and conditions which require particular caution on his part, are discussed in the following paragraphs.

LIGHTS

The condition of the atmosphere has a considerable effect upon the distance at which lights can be seen. Sometimes lights are obscured by fog, haze, dust, smoke, or precipitation which may be present at the light, or between it and the observer, but not at the observer, and possibly unknown to him. On the other hand, refraction may often cause a light to be seen farther than under ordinary circumstances. A light of low intensity will be easily obscured by unfavorable conditions of the atmosphere and less dependence can be placed on its being seen. For this reason, the intensity of a light should always be considered when expecting to sight it in thick weather. Haze and distance may reduce the apparent duration of the flash of a flashing light. In some conditions of the atmosphere white lights may have a reddish hue. Colored lights are more quickly lost to sight under weather conditions which tend to reduce visibility than are white lights.

It should be remembered that lights placed at great elevations are more frequently obscured by clouds, mist, and fog than those near sea level.

In regions where ice conditions prevail in the winter, the lantern panes of unattended lights may become covered with ice or snow, which will greatly reduce the visibility of the lights and may also cause colored lights to appear white.

The increasing use of brilliant shore lights for advertising, illuminating bridges, and other purposes, may cause marine navigational lights, particularly those in densely inhabited areas, to be outshone and difficult to distinguish from the background lighting. Mariners are requested to report such cases as outlined above in order that steps may be taken to improve the conditions.

The "loom" of a powerful light is often seen beyond the limit of visibility of the actual rays of the light. The loom may sometimes appear sufficiently sharp to obtain a bearing.

At short distances, flashing lights may show a faint continuous light between flashes.

It should be borne in mind that, when attempting to sight a light at night, the range of vision is considerably increased from aloft. By noting a star immediately over the light an accurate compass bearing may be indirectly obtained on the light from the navigating bridge although the light is not yet visible from that level.

The distance of an observer from a light cannot be estimated by its apparent intensity. Always check the characteristics of lights in order that powerful lights visible in the distance shall not be mistaken for nearby lights showing similar characteristics at low intensity (such as those on lighted buoys).

If lights are not sighted within a reasonable time after prediction, a dangerous situation may exist requiring prompt resolution or action to insure the safety of the vessel.

The apparent characteristic of a complex light may change with the distance of the observer. For example, a light which actually displays a characteristic of fixed white varied by flashes of alternating white and red (the phases having a decreasing range of visibility in the order, flashing white, flashing red, fixed white) may, when first sighted in clear weather, show as a simple flashing white

RED STAR'S EXHIBIT 2

light. As the vessel draws nearer, the red flash will become visible and the characteristic will apparently be alternating flashing white and red. Later, the fixed white light will be seen between the flashes and the true characteristic of the light finally recognized—fixed white, alternating flashing white and red (F. W. Alt. Fl. W. and R.).

There is always the possibility of a light being extinguished. In the case of unattended lights, this condition might not be immediately detected and corrected. The mariner should immediately report this condition. During periods of armed conflict, certain lights may be deliberately extinguished without notice if the situation warrants such action.

Emergency lights. Emergency lights of reduced candlepower are displayed from many major light stations when the main and stand-by lights are extinguished; these emergency lights may or may not have the same characteristic as the main light. The characteristic of the emergency lights are listed in column (7) of this publication.

If a vessel has considerable vertical motion due to pitching in a heavy sea, a light sighted on the horizon may alternately appear and disappear. This may lead the unwary to assign a false characteristic and hence to err in its identification. The true characteristic will be evident after the distance has sufficiently decreased or it can be determined by increasing the height of eye of the observer.

Sectors of colored glass are placed in the lanterns of some lights to produce a system of light sectors of different colors. In general, red sectors are used to mark shoals or to warn the mariner of other obstructions to navigation or of nearby land. Such lights provide approximate bearing information since an observer may note the change of color as he crosses the boundary between sectors. These boundaries are indicated in the Light Lists and by broken lines on the charts. These bearings, as all bearings referring to lights are given as true in degrees from 000° to 359° as observed from a vessel toward the light. Altering course on the changing sectors of a light or using the boundaries between light sectors to determine the bearing for any purpose is not recommended. Be guided instead by correct compass bearing of the light and do not rely on being able to accurately observe the point at which the color changes. This is often difficult to decide because the edges of a colored sector cannot be cut off sharply. On either side of the line of demarcation between white and red sectors, and also between white and green, there is always a small arc of uncertain color. Moreover, when haze or smoke are present in the intervening atmosphere, a white sector might have a reddish hue.

The area in which a light can be observed is normally a circle with the light as the center and the range of visibility as the radius. However, on some bearings the range may be reduced by obstructions. In such cases, the obstructed arc might differ with height of eye and distance. When a light is cut off by adjoining land and the arc of visibility is given, the bearing on which the light disappears may vary with the distance of the vessel from which observed and with the height of eye. When the light is cut off by a sloping hill or point of land, the light may be seen over a wider arc by a ship far off than by one close to.

Circles drawn on charts around a light are not intended to give information as to the distance at which it can be seen, but solely to indicate, in the case of lights which do not show equally in all directions, the bearings between which the variation of visibility or obscuration of the light occurs.

At many lights rip-rap mounds are maintained to protect the structures against ice damage and scouring action. There have been collisions with the uncharted, submerged portions of such rip-rap by vessels attempting to pass the lights extremely close aboard.

FOG SIGNALS

Fog signals depend upon the transmission of sound through air. As aids to navigation, they have certain inherent defects that should be considered. Sound travels through the air in a variable and frequently unpredictable manner.

It has been clearly established that:

(a) Fog signals are heard at greatly varying distances and that the distance at which a fog signal can be heard may vary with

the bearing of the signal and may be different on occasion.

(b) Under certain conditions of atmosphere, when a fog signal has a combination high and low tone, it is not unusual for one of the tones to be inaudible. In the case of sirens, which produce a varying tone, portions of the blast may not be heard.

(c) There are occasionally areas close to the signal, in which it is wholly inaudible. This is particularly true when the fog signal is screened by intervening land or other obstruction, or on a high cliff.

(d) A fog may exist a short distance from a station and not be observable from it, so that the signal may not be in operation.

(e) Some fog signals cannot be started at a moment's notice.

(f) Even though a fog signal may not be heard from the deck or bridge of a ship when the engines are in motion, it may be heard when the ship is stopped, or from a quiet position. Sometimes it may be heard from aloft though not on deck.

(g) The intensity of the sound emitted by a fog signal may be greater at a distance than in the immediate proximity.

All these considerations point to the necessity for the utmost caution when navigating near land in a fog. Mariners are therefore warned that fog signals can never be implicitly relied upon, and that the practice of taking soundings of the depth of water should never be neglected. Particular attention should be given to placing lookouts in positions in which the noises in the ship are least likely to interfere with hearing a fog signal. Fog signals are valuable as warnings but the mariner should not place implicit reliance upon them in navigating his vessel. They should be considered solely as warning devices.

Emergency fog signals. Emergency fog signals are sounded at some of the light and fog signal stations when the main and stand-by fog signal is inoperative. Some of these emergency fog signals are of a different type and characteristic than the main fog signal. The characteristic of the emergency fog signals are listed in column (7) of this publication.

The mariner must not assume:

(a) That he is out of ordinary hearing distance because he fails to hear the fog signal.

(b) That, because he hears a fog signal faintly, he is at a great distance from it.

(c) That he is near to it because he hears the sound plainly.

(d) That the distance from and the intensity of the sound on any one occasion is a guide to him for any future occasion.

(e) That the fog signal is not sounding because he does not hear it, even when in close proximity.

LIGHTSHIPS

Courses should invariably be set to pass lightships with sufficient clearance to avoid the possibility of collision from any cause. Errors of observation, current and wind effects, other vessels in the vicinity, and defects in steering gear may be, and have been the causes of actual collisions, or imminent danger thereof, needlessly jeopardizing the safety of lightships and their crews, and that of all navigation dependent on these important aids to navigation. Experience shows that lightships cannot be safely used as leading marks to be passed close aboard, but should always be left broad off the course, whenever searoom permits.

When approaching a lightship or a station on a submarine site, on radio bearings, the risk of collision will be avoided by insuring that the radio bearing does not remain constant.

It should be borne in mind that most lightships are anchored to a very long scope of chain and, as a result, the radius of their swinging circle is considerable. The charted position is the location of the anchor. Furthermore, under certain condition of wind and current, they are subject to sudden and unexpected sheers which are certain to hazard a vessel attempting to pass close aboard.

During extremely heavy weather and due to their exposed locations, lightships may be carried off station without the knowledge, and despite the best efforts of their crews. The mariner should, therefore, not implicitly rely on a lightship maintaining its precisely charted position during and immediately following severe storms. A lightship known to be off station will secure her light, fog signal, and radiobeacon and fly the International Code signal "LO" signifying "I am not in my correct position".

RED STAR'S EXHIBIT 2

Station buoys are sometimes moored near lightships to mark the approximate station should the lightship be carried away or temporarily removed and to give the crews an indication of drifting. Since these buoys are always unlighted and, in some cases, moored as much as a mile from the lightship, the danger of a closely-passing vessel colliding with them is always present, particularly so during darkness or periods of reduced visibility.

BUOYS

It is imprudent for a navigator to rely on floating aids to navigation to always maintain their charted positions and to constantly and unerringly display their advertised characteristics. The obstacles to perfect performance are of such magnitude that complete reliability is manifestly impossible to achieve. Buoys are liable to be carried away, shifted, capsized, or sunk as the result of storms, ice conditions, collisions, or other accidents. Lighted buoys become extinguished or their lighting apparatus broken or deranged causing them to show improper light colors or light phase characteristics. Practically all audible signals on buoys are operated by the action of the sea and may consequently be silent during periods of calm water. They may fail to sound, regardless of wave activity, due to mechanical defects or damage to their sound-producing devices. Even if functioning properly, a sound buoy may not be heard at relatively close range due to the vagaries of sound in atmosphere as explained herein under "Fog Signals". Buoys that have been placed to mark shifting shoals may not always be properly located in relation to the obstructions they are meant to mark. This is particularly true during and immediately following heavy storms when the shoals are liable to shift their positions away from the buoys.

Buoys are moored to scopes of chain of various lengths, in some cases several times the depth of the water in which they are located. Like the LIGHTSHIP, the radius of swing should be taken into account.

The position of a buoy, as shown on the chart, actually represents the location of its sinker to which the mooring chain is shackled. The buoy, however, does not maintain position directly over its sinker. Being moored as they are, buoys have a tendency to yaw about under the influence of the wind and current. This action is most unpredictable and a vessel attempting to pass very close aboard always risks collision with a yawing buoy.

The idea seems to have developed among the more uninitiated that a wreck buoy always occupies a position directly over the wreck it is intended to mark. This idea is entirely erroneous. Buoys must be placed in position by a vessel. It is usually physically impossible for these vessels to maneuver directly over a wreck to place the sinker without incurring serious underwater damage to themselves. For this reason, a wreck buoy is usually placed on the seaward or channelward side of a wreck, the proximity thereto being governed by existing conditions. If necessary to reduce the possibility of confusion, more than one buoy is used per wreck in which case both may not be located on the seaward or channelward side of the wreck but the wreck will lie between them. Obviously, the mariner should not attempt to pass between buoys so placed.

Sunken wrecks are not always static. They are sometimes moved away from their buoys by severe sea conditions or other causes. The previously mentioned precaution regarding shoals shifting away from buoys placed to mark them, also applies in sunken wrecks and wreck buoys.

All buoys should, therefore, be regarded as warnings or guides and not as infallible navigation marks; especially those located in exposed positions. Whenever possible, a ship should be navigated by bearings or angles on fixed objects on shore and by soundings rather than by reliance on buoys.

Racing buoys. All privately maintained racing buoys are not listed in this publication. Information concerning these buoys may be obtained from the U. S. Coast Guard District Office.

RADIOBEACONS AND RADIO DIRECTION FINDERS

Accuracy of radio direction finders is dependent upon the skill of the operator, the equipment used, and radio wave interference. Skill in operations of a manual radio direction finder can be acquired only through practice and by following the operating instructions provided with the equipment. An understanding of adverse conditions and direction finding limitations will be an asset to the prudent navigator.

As an operator obtains bearings with a manually revolving

loop type direction finder, he can estimate the bearing by the arc of silence (NULL) or minimum strength. Automatic direction finders do not afford this advantage. However, an experienced operator can evaluate the direction finder's performance by the ease and smoothness (lack of jitter) with which the indicator approaches a bearing.

Erroneous radio direction finder bearings may result from the following conditions:

(a) Currents induced in the direction finder antenna by re-radiation from the structural features of the vessel's superstructure and distortion of the radio wave front due to the physical dimensions and contour of the vessel's hull.

(b) Night effect caused by the combination of two radio wave fronts arriving at the receiver simultaneously. One wave travels directly from the transmitter to the direction finder and is called the ground wave. The other is a down-coming radio wave reflected off the ionosphere and is called the skywave. This effect is more predominant around the time of morning and evening twilight, but it remains throughout the night on the low frequency band. On higher frequencies a similar effect exists during the day as well as at night. Beyond the normal groundwave range, only the skywave is received.

Bearings taken around the periods of morning and evening twilight and at night should be treated or accepted with doubt as to their accuracy.

Since the skywave itself is complex in nature it should not be used with a conventional direction finder.

(c) Lateral deviation of the radio wave can occur when the great circle route between the transmitter and the receiver is roughly parallel to a coastline or passed over a coastline. Bearings that are within 10 to 15 degrees of a coastline should not be trusted. Likewise, bearings taken when a land mass is between the transmitter and the vessel should be used with caution.

(d) Most direction finders have a vertical sensing antenna to eliminate any possibility of a 180 degree error in reading. Such an ambiguity is possible in all direction finders if the sensing circuits should become inoperative.

Conclusions: Correct direction finder calibration will compensate for errors caused by induced currents and vessel configuration. The usual method of calibration is to obtain a series of simultaneous radio and visual bearings on a transmitter. This may be done while a ship swings at anchor, or more quickly by steaming in a circle within sight of the transmitting antenna. It is essential that radio direction finders be accurately calibrated; therefore, recalibration should be made after any changes to the ship's structure or rigging or whenever there is reason to believe the previous calibration has become inaccurate. The direction finder should be calibrated by competent personnel.

Before taking bearings on a commercial station broadcasting entertainment programs, the mariner should consider:

(a) The operating frequency of the station may differ widely from the frequency for which the direction finder is calibrated.

(b) The broadcast antenna may be remote from the broadcast station and,

(c) The majority of these stations are inland.

Accordingly, the use of broadcast stations to obtain a direction finder bearing is not recommended.

Due to the many factors which go into the transmission and reception of radio signals, a ship cannot estimate with any degree of accuracy its distance from a radiobeacon by the strength of the received signals.

A vessel steering a course for a radiobeacon should observe the same precautions that apply when steering for a light or any other mark. If the radiobeacon is a lightship or off-shore platform, particular care should be exercised to avoid the possibility of collision. Sole reliance should never be placed on sighting the lightship or light station or listening for a fog signal in time to avoid a collision.

As a further aid to assure proper direction finder operation, the mariner should check, whenever possible, the accuracy of the direction finder against visual bearings. This will afford the operator practice and confidence in his equipment as well as an operational check of the direction finder itself.

RED STAR'S EXHIBIT 2

(1) No.	(2) Name Characteristic	(3) Location Lat. N. Long. W.		(4) Nominal Range Intensity	(5) Geo- graphic Range	(6) Structure Ht. above ground	Ht. above water	(7) Remarks Year
NEW YORK						THIRD DISTRICT		
NEW YORK HARBOR								
Lower Hudson River								
1863	— Lighted Buoy 12..... Qk. Fl. R.	In 35 feet.....				Red.....		Ra ref. Replaced by nun with red reflector from Dec. 1 to Apr. 1.
1864	HAVERSTRAW AERO LIGHT..... Alt. Fl. W. and G., 10 ^s	41 11.3 73 57.9		1,200,000			966	Maintained by the Civil Air Patrol.
1864.50	—Lighted Buoy 13..... Fl. G., 4 ^s	In 25 feet.....				Black.....		Replaced by can from Dec. 1 to Apr. 1.
1865	— Lighted Buoy 14..... Fl. W., 4 ^s	In 33 feet.....				Red.....		Replaced by nun with red reflector from Dec. 1 to Apr. 1.
	— Buoy 15.....	In 10 feet.....				Black can.....		Private aid.
1866	GRASSY POINT LIGHT..... F. R.	41 13.2 73 57.7					13	
1867	— Lighted Buoy 16..... Fl. R., 4 ^s	In 35 feet.....				Red.....		Ra ref. Replaced by nun with red reflector from Dec. 1 to Apr. 1.
	Stony Point Racing Buoy B, C and D.	In 9 to 12 feet.....				Orange and white horizontal bands; barrels.		Private aid maintained from May 15 to Oct. 1.
1868	STONY POINT LIGHT 17..... F. G.	On end of point..... 41 14.5 73 58.3		1,100		Black skeleton tower, white central column, small white house, concrete base.	58	BELL: 1 stroke ev 15 ^s 1826-1925
	Resident Personnel.							
1868.10	HAVERSTRAW BAY NORTH REACH RANGE FRONT LIGHT. E. Int. W., 6 ^s	41 14.8 73 57.8				KRW on skeleton tower.....	25	6,000 cp visible on range line only. 1969
1868.20	HAVERSTRAW BAY NORTH REACH RANGE REAR LIGHT. F. W.	422 yards 343° from front light.				KRW on skeleton tower.....	49	13,000 cp visible on range line only. 1969
	Greens Cove Channel Buoys 1, 2, 3, 4.	In 3 feet.....				Odd numbered, black can; even numbered, red nun.		Private aids. Maintained from Apr. 1 to Dec. 1.
1868.50	— Lighted Buoy 19..... Fl. G., 4 ^s	In 27 feet.....				Black.....		Replaced by can from Dec. 1 to Apr. 1.
1869	PEEKSKILL BAY SOUTH CHANNEL JUNCTION LIGHT. I. Qk. Fl. W.	North side of entrance to Peekskill. 41 16.9 73 56.7				JR on red and black banded skeleton tower.	47	1934
	Peekskill Bay South Channel Buoy 2.	In 8 feet, on south side of entrance to channel.				Red nun.....		
	Peekskill Bay South Channel Buoy 3.	In 8 feet.....				Black can.....		White reflector.
	Peekskill Bay South Channel Buoy 4.	In 7 feet.....				Red nun.....		
	Peekskill Bay North Channel Buoy 1.	In 10 feet, north side of entrance to channel.				Black can.....		White reflector.
	Peekskill Bay North Channel Buoy 2.	In 12 feet, on south side of entrance to channel.				Red nun.....		Red reflector.
	Peekskill Bay North Channel Buoy 3.	In 6 feet.....				Black can.....		White reflector.
	Peekskill Bay North Channel Buoy 4.	In 6 feet.....				Red nun.....		
1870	—LIGHT 21..... Fl. G., 4 ^s	On north end of Iona Island. 41 18.6 73 58.7				Black skeleton tower, small white house, black base.	52	1889-1933
	—Buoy 23.....	In 120 feet.....				Black can.....		White reflector.
1871	BEAR MOUNTAIN WHARF LIGHT. F. R.	On southeast corner of roof on north block. 41 19.0 73 59.2		100			16	Private aid. 1916-1965
1872	ANTHONY'S NOSE AERO LIGHT... Fl. W., 10 ^s	41 19.1 73 58.5		800,000			950	Maintained by Federal Aviation Agency.
1874	— Lighted Buoy 25..... Fl. G., 4 ^s	In 15 feet, southeast side of rocky shoal.				Black.....		Replaced by can from Dec. 1 to Apr. 1.

RED STAR'S EXHIBIT 2

(1) No.	(2) Name Characteristic	(3) Location Lat. N. Long. W.	(4) Nominal Range Intensity	(5) Geo- graphic Range	(6) Structure Ht. above ground Ht. above water	(7) Remarks Year
NEW YORK						THIRD DISTRICT
NEW YORK HARBOR						
Lower Hudson River						
1875	—LIGHT 27 Fl. W., 4 ^s	On east side of Con Hook Island. 41 21.1 73 57.8	170		Black skeleton tower, small white house. 46	1889-1919
1875. 50	HIGHLAND FALLS MARINA LIGHT. Gk. Fl. G.	In 3 feet on end of floating dock.			Pole 15	Private aid maintained from May 1 to Oct. 30. 1969
1876	GARRISON MARINA LOWER LIGHT. F. R.	41 22.9 73 56.9	1,600		Gray rectangular structure. 16	Private aid maintained from May 15 to Oct. 15. 1960
1877	GARRISON MARINA UPPER LIGHT. F. R.		1,600		Gray rectangular structure. 16	Private aid maintained from May 15 to Oct. 15. 1960
1878	—LIGHT 29 Fl. G., 4 ^s	On Duck Island near West Point.			Black skeleton tower, small white house, black base. 26	Higher intensity beam down river. 1934
1879	—LIGHT 31 F. G.	On Gees Point			SW on black skeleton tower, white central column, small white house. 39	BELL: 7 stroke ev 15 ^s . Higher intensity beam up channel. 1853-1946
1879. 25	—Lighted Buoy 32 Fl. R., 4 ^s	In 16 feet, on east edge of flats at turn at West Point.			Red	Replaced by nun from Dec. 1 to Apr. 1.
1880	—LIGHT 34 Fl. W., 4 ^s	On end of Magazine Point, Constitution Island.			Red skeleton tower, small white house. 61	Higher intensity beam pu nivez. 1919
	—Buoy 36	In 15 feet, off Maga- zine Point on west side of rocks.			Red nun	Red reflector.
1881	—LIGHT 38 Fl. R., 4 ^s	In 3 feet, west side of Pollepel Island.	110		Red skeleton tower, small white house, red base. 45	Higher intensity beam up and down channel. 1928-1930
1882	NEWBURGH SOUTHERLY DOLPHIN LIGHT. F. G.	In 26 feet 41 28.4 74 00.8	110		Dolphin..... 6	Private aid. 1962
1883	NEWBURGH NORTHERLY DOL- PHIN LIGHT. F. G.	In 26 feet 41 28.4 74 00.8	110		Dolphin..... 6	Private aid. 1962
1884	BEACON AERO LIGHT..... Alt. Fl. W. and R., 10 ^s	On South Beacon Hill. 41 29.3 73 56.9	800,000			Maintained by Federal Aviation Agency.
1886	Newburgh-Beacon Bridge Fog Signal.	On bridge				HORN: 1 blast ev 20 ^s (2 st bl). Private aid. 1963
1887	—Lighted Buoy 40 Fl. W., 4 ^s	In 35 feet			Red	Replaced by nun from Dec. 1 to Apr. 1.
	Chelsea Racings Buoy A, C, D, E, F.	In 3 to 11 feet			Orange and white bands	Private aids maintained from June 1 to Nov. 1.
	Wappinger Creek Channel Buoy 1...	In 12 feet			Black can.	White reflector.
	Wappinger Creek Channel Buoy 2...	In 18 feet, south side of channel entrance. 41 34.8 73 57.1			Red nun	
	Wappinger Creek Channel Buoy 4...	In 6 feet.....			Red nun.....	
(Chart 283)						
1889	Diamond Reef Lighted Buoy..... I. Qk. Fl. W.	In 30 feet, on south side of rock, off Hamburg.			Red and black horizontal bands.	Replaced by nun from Dec. 1 to Apr. 1.
1890	—Shoal Lighted Buoy A..... I. Qk. Fl. R.	In 20 feet, on south side of shoal, off Van Keurens. 41 38.7 73 56.9			Red and black horizontal bands.	Replaced by nun with red reflector from Dec. 1 to Apr. 1.

REITER Ex 3
FOR DI
4/27/76

A UNITED STATES
DEPARTMENT OF
COMMERCE
PUBLICATION



United States Coast Pilot
EIGHTH EDITION - 1973

2

ATLANTIC COAST

Cape Cod to
Sandy Hook

U.S. DEPARTMENT
OF COMMERCE

NATIONAL
OCEANIC AND
ATMOSPHERIC
ADMINISTRATION

NATIONAL
OCEAN SURVEY

RED STAR'S EXHIBIT 3

12. HUDSON RIVER

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knots at George Washington Bridge, 0.9 and 1.1 knots at Newburgh, 1.1 and 1.2 knots at Poughkeepsie, 1.3 and 1.6 knots at Kingston, and 1.3 knot flood and 0.8 knot ebb at Albany. Near Troy Lock and Dam, the current does not flood and the ebb has a velocity of 0.7 knot. These values are for the summer when the fresh-water discharge is at a minimum.

Daily current predictions for the Narrows, New York Harbor, are given in the Tidal Current Tables. Predictions for places along Hudson River may be obtained by applying the differences and ratios listed for these places in the tables. The directions and velocities of the currents throughout New York Harbor for every hour of the tidal cycle are shown on the Tidal Current Charts, New York Harbor.

Ice.—In extremely severe winters Hudson River may be temporarily closed to navigation because of ice. Depending upon the extent of ice conditions and the availability of suitable icebreakers, the Coast Guard endeavors to maintain an open channel to Albany to meet any reasonable demands of commerce. The ice season usually starts in early January and ends in mid-March. Normally shipping is affected most seriously in the Hudson River between Tappan Zee and Albany. In addition to the problem of getting through the ice, aids to navigation are covered or dragged off station by moving ice. Buoys are removed from the Hudson River during the ice season then reset in late March when the ice clears. However, the river is well marked by lights along the shore.

Freshets.—During March, April, and May, freshets have reached heights above normal high water of as much as 18 feet at Albany and 25 feet at Troy Lock and Dam. At the time of the larger freshets the tide may be completely masked, the water continuing to rise and fall for a period of several days without any tidal oscillation. At the time of smaller freshets the range of tide is greatly diminished and the times of high and low waters are somewhat delayed.

During the smaller freshets, the flood current disappears and the ebb current has a velocity of about 1.5 knots. The larger freshets produce an ebb current that varies from 1.5 to nearly 5 knots depending on the size of the freshet and the stage of the tide.

Pilotage is compulsory on the Hudson River for foreign vessels and U.S. vessels under register. Pilotage north of Yonkers is provided by the Hudson River Pilots Association. Arrangements for pilot services are generally made in advance through ships' agents or directly by shipping companies: 24-hour service is provided. Pilots board vessels from launches in midriver (40°56'21" N., 73°54'41" W.) off the pilot station at Yonkers, N.Y.; pilots debark at the same location. Bridge-to-bridge communication (156.65 mc.) is maintained by the pilots on the Hudson River. Vessels between Yonkers and Ambrose Channel entrance are serviced by Sandy Hook Pilots, and vessels

proceeding from or to Execution Rocks by Hell Gate Pilots.

Towage.—Tugs are available in New York Harbor and at Albany. (See chapter 11, and Albany later in this chapter.)

Quarantine, customs, and immigration.—Matters pertaining to these services for places along Hudson River are handled at the Port of New York or at Albany. (See chapter 11, New York Harbor, and Albany later in this chapter.)

Chart 745.—Hudson River averages about 0.6 mile in width along this 5-mile stretch above the Battery. The chart covers most of the principal wharves on the New York City side and those of Jersey City, Hoboken, and Weehawken on the west, or New Jersey, side.

Chart 746.—On the New Jersey side of the river are the piers of Guttenberg, Mile 5.5W; Hudson Heights, Mile 6.5W; Edgewater, Mile 7.5W; and Fort Lee, Mile 9.5W. Small-craft facilities at Edgewater can provide berths, electricity, gasoline, diesel fuel, water, ice, marine supplies, storage, and hull and engine repair. The largest mobile hoist can handle craft up to 55 feet.

The New York side of the river is mostly parkway for the length of the chart. A marina, at Mile 5.5E, can provide berths, electricity, gasoline, diesel fuel, water, ice, marine supplies, and minor engine repairs.

Sailors and Soldiers Monument, Mile 6.2E, is a prominent landmark at 89th Street and Riverside Drive, Manhattan.

General Grants Tomb, Mile 7.7E, is prominent at 123rd Street and Riverside Drive, Manhattan.

George Washington Bridge, Mile 10, crosses Hudson River from Fort Lee, N.J., to Fort Washington Point, New York City. The suspension span is nearly 0.6 mile long from shore to shore, and the tops of the towers are about 600 feet above the water. The clearance at midriver is more than 200 feet.

Chart 747.—From Fort Lee, N.J., the rocky cliffs of Palisades Interstate Park extend up the west side of the river for about 12 miles to Piermont, N.Y. The Palisades are 300 to 500 feet high and in places are thickly wooded with scrub.

Tubby Hook, Mile 11E, has several small-boat landings.

Spuyten Duyvil Creek, entered at Mile 12E, is marked by the railroad swing bridge over the mouth. The creek is the Hudson River entrance to Harlem River, which is described in chapter 9. Currents are swift and erratic around the mouth of the creek.

Englewood Boat Basin, on the New Jersey side opposite Spuyten Duyvil Creek, has depths of 3 to 7 feet and can accommodate craft up to 55 feet in length; berths, gasoline, diesel fuel, water, and ice are available.

Yonkers, Mile 16E, adjoins the north side of

RED STAR'S EXHIBIT 3

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12. HUDSON RIVER

marks the north side of the southern entrance. In 1957, the controlling depths were 6½ feet in the south channel, 8 feet in the north channel, and 5 feet in the channel west of the wharves.

A yacht club at Peekskill has gasoline, water, and ice.

On the south side of Peekskill, a privately maintained channel leads from deep water in Hudson River to an oil storage facility on Charles Point. A privately maintained range marks the channel, but is lighted only when a ship or tow is expected. The channel has a controlling depth of about 26 feet.

An oil receiving pier at Rao Hook, on the north side of Peekskill, has a reported depth of about 18 feet alongside.

Peeks Kill is a very shallow creek on the north side of Peekskill. The railroad bridge over the entrance has a bascule span with a clearance of 3 feet. (See 117.190 (a) and (f) (9), chapter 2, for drawbridge regulations.) The highway bridge 0.2 mile above the railroad bridge has a fixed span with a clearance of 19 feet.

Dunderberg, 1,110 feet high, is a densely wooded mountain at Mile 38W. The mountain slopes eastward to Jones Point, which is low and flat.

The river becomes much narrower at Jones Point and has an average width of 0.3 mile for the next 8 miles between the bases of the highlands on both sides. When approaching the sharp turns in this reach, caution should be exercised and a warning signal should be given.

Iona Island, formerly a naval depot at Mile 40W, is controlled by the Palisades Interstate Park Commission. A light, shown from a skeleton tower on the north side of the island, is conspicuous.

A rock, with a depth of 10 feet over it and marked by a buoy, is 0.2 mile north-northwestward of the northernmost point of Iona Island. When descending the river, particularly with a strong fair current, a careful watch should be maintained to avoid being set on this rock.

Bear Mountain, Mile 40.3W, is 1,305 feet high and has its summit about 1 mile inland. There are wharves at Day Line Park, on the riverbank at the foot of the mountain.

Anthony's Nose, 900 feet high, is a steep, thickly wooded hill at Mile 40.5E. Anthony's Nose Aero Light (41°19.1' N., 73°58.5' W.), 950 feet above the water, is shown from a tower atop the hill.

Bear Mountain Bridge, Mile 40.6 crosses the Hudson River from Bear Mountain to Anthony's Nose. The suspension span has a clearance of 155 feet.

Con Hook, a small island at Mile 43W, is marked on its channel side by a light. A rock, with a depth of 7 feet over it and marked by a lighted buoy, is about 0.3 mile southward of Con Hook. When descending the river, particularly with a fair current, there is a tendency to set toward the rock; caution is advised.

Highland Falls, Mile 44W, is the site of the Ladycliff School for Women. A tower at the

school is prominent.

A yacht club at Garrison, Mile 45E, has depths of about 20 feet alongside its fuel dock. Craft up to 60 feet in length can be accommodated at the slips; gasoline, water, electricity, and some marine supplies are available.

West Point, Mile 45W, is the site of the U.S. Military Academy. The academy is easily recognized from the prominence of the buildings and the road leading up the hillside from the railroad station and wharfs on the riverbank.

A special small-craft anchorage area is at West Point. (See 110.1 and 110.60 (p-1), chapter 2, for limits and regulations.)

The northeastern extremity of West Point descends to Gees Point, a rocky feature which is marked by a light with fog signals. About 0.2 mile south of Gees Point, another light marks the outer edge of a rocky shallow area along the west bank.

Worlds End, a sharp bend in Hudson River at Mile 46, has depths of more than 200 feet. Extreme caution should be exercised when passing through Worlds End; the view is obstructed and vessels should reduce speed and sound a warning signal.

Constitution Island is on the upper side of Worlds End at Mile 46.5E. Magazine Point, on the channel side of the island, is marked by a light.

Crows Nest Mountain, Mile 47W, is 1,403 feet high and prominent. A boat club is at Cold Spring, Mile 47.3E.

Little Stony Point, Mile 48E, is the site of a rock quarry with a prominent hopper structure.

Storm King Mountain, 1,355 feet high, is prominent at Mile 49W.

Breakneck Point, on the opposite side of Hudson River from Storm King Mountain, is marked by one highway tunnel and two railroad tunnels; the lights are prominent at night. Behind Breakneck Point is Breakneck Mountain, 1,196 feet high.

Cornwall On The Hudson is at Mile 50W. The wharf at Cornwall is in ruins. A boat club and a yacht club, about 0.6 mile southeastward of the wharf in ruins, can provide gasoline and water. guest moorings and a launching ramp are available.

Pollepel Island, Mile 50E, is a private estate with buildings that resemble a medieval castle. A light is shown from a skeleton tower 0.1 mile off the west side of the island.

Newburgh, Mile 53W, is a major petroleum distribution center. Most of the piers of the major oil companies are at New Windsor, the southern end of the 2-mile waterfront at Newburgh. Depths at the piers are reported to range from about 14 feet at the northern end to 30 feet at the southern end of the waterfront.

The yacht club landing near the north end of the Newburgh waterfront has depths of about 4 feet alongside. The marine railways here can haul a craft up to 40 feet in length for minor engine and hull repairs; berths, electricity, gasoline, fuel, water, ice, and marine supplies are available.

Beacon, on the east bank of the Hudson River opposite Newburgh, has some manufacturing

OVERSIZE FOLDOUT(S) FOUND HERE IN
THE PRINTED EDITION OF THIS VOLUME
ARE FOUND FOLLOWING THE LAST PAGE
OF TEXT IN THIS MICROFICHE EDITION

SEE FOLDOUT NO. 1

Time

IDA

TYPE C
DOAT

Bge

Bge

DAILY REPORT TUG OCEAN PRINCE

Date Fri Feb - 1 - 1984

RED STAR'S EXHIBIT 6.

Def E, 1 found

OVCT - BB 5/10/75

Signed J. B. [unclear]

Time Tied Up _____ M

Date SAT. FEB - 2 - 1924

TYPE OF BOAT	V L T O	NAME	FROM	TIME LEFT	TO	TIME ARRIVED	PASSED EXECUTION	
							EAST	WEST
		0001- Lt. ... to ...	...	...	...			
		0005-0005 Asst-Lt. ...	...	...	...			
		Lt. ...	...	...	...			
		0035-0035 ...	...	...	...			
		Lt. ...	...	...	...			
		0115-0115 ...	...	...	...			
		Lt. ...	...	...	...			
		0115-0115 ...	...	...	...			
		Lt. ...	...	...	...			
		0900-1005 ...	...	...	...			
		Lt. ...	...	...	...			
		1230-1245 ...	...	...	...			
		Lt. ...	...	...	...			
		1245-1915 ...	...	...	...			
		...	...	...	...			
		...	...	...	...			

RED STAR'S EXHIBIT 6

16

Signed _____

OVER

M

Date JAN FEB 3 1974

RED STAR'S EXHIBIT 6

17

Signer

OVER

Time Started

DAILY REPORT TUG *Ocean Prince*Date *March 27*

TYPE OF BOAT	VLT	NAME	FROM	TIME LEFT	TO	TIME ARRIVED	PASSED EXECUTION	
							EAST	WEST
		Stand by at St BTN.		0001		0130		
11 Aug		Colbuck	BTW	0130	Standard Tank.	0255		
		Stand by Stand Tank		0255		0515		
11 Aug			Stand Tank.	0515	Claremont	0550		
12 Aug		"ZUBIZAPETTA"	Claremont Term	0615	Red Hook Anch.	0815		
13 Aug			Red Hook Anch.	0815	Bushkeys	0930		
		Stand by		0830		0930		
14 Aug			Bushkeys	0930	Eric Basin	0945		
15 Aug		AFDL #4	Wardock 3 Eric Basin	0945	Pier 5 Eric Basin	1315		
16 Aug			Eric Basin	1315	Pier 4 Army Base	1345		
17 Aug		Iron Caravan	Pier 4 Army Base	1345	Stream	1415		
18 Aug			Army Base	1415	Pier 7 J.C.R.R.	1500		
19 Aug		RS 21	Pier 7 J.C.R.R.	1515	Pier 45 N.R.	1605		
20 Aug		RS 22	" " "	1515	" " "	1605		
21 Aug			Pier 15	1605	Metro N.T.C.	1700		
22 Aug		B th 20	Metro N.T.C.	1700	Metro 138 th St.	1825		
23 Aug			E 138 th St	1830	Pier 2 Bush	1940		

cont'd

Signed

Louis D. Sampson

RED STAR'S EXHIBIT 6

M

REPORT

TUG Ocean Prince

Date _____

Mon Feb 4

1974

[illegible]

Signed

Louis J. Sampson

OVER

RED STAR'S EXHIBIT 6

OVERSIZE FOLDOUT(S) FOUND HERE IN
THE PRINTED EDITION OF THIS VOLUME
ARE FOUND FOLLOWING THE LAST PAGE
OF TEXT IN THIS MICROFICHE EDITION

SEE FOLDOUT NO. 2

RED STAR'S EXHIBIT 9.

T/E 23

DECK LOG

FORM 180

VESSEL OCEAN PRINCE

2948

FROM January 1, 1974 TO JUNE 5 1974

DATE SAT FEB - 2 - 1974

TIME	REMARKS: (INCLUDE EXPLANATORY OPERATIONAL DATA SUCH AS ARRIVAL AND DEPARTURE, LOADING AND TOWING OPERATIONS, DELAYS, DISCHARGE, CARGO, TANK CLEANING, REPAIRS, ETC.)	OFFICER ON WATCH
0020	LT TUG ENROUT TO SEAWARD ROYAL	
0025-0235	ASSI TUG CENECA WITH BGE H/32 SEAWARD TO GOV ISL	
0235-0255	LT TUG GOV ISL TO MORRIS CANAL	
0255-0350	LUB OIL AT MORRIS CANAL	
0350-0445	LT TUG MORRIS CANAL - B.T.W. BAYONNE	
0445-0710	STANDING BY AT " "	
0710 0910	LT B-T.W TO HESS REVERE ✓	
0910/000	WAIT FOR BGE NEW LONDON TO DISCHARGE	
1005	LT BGE NEW LONDON HESS REVERE TO EXXON-CON-HOOK	
1015	AT BUSHEYS YARD, STAND BY FOR ORDERS	
1815 1850	LT BUSHEYS YARD TO EXXON-CONHOOK	
1915	BGE NEW LONDON - LD FROM EXXON-CON/HK	
2015	PASSED BATTERY NYE.	
2000	" YONIKERS "	

RED STAR'S EXHIBIT 9

DATE SUN FEB 3, 1974

TIME	REMARKS: (INCLUDE EXPLANATORY OPERATIONAL DATA SUCH AS ARRIVAL AND DEPARTURE, LOADING AND TOWING OPERATIONS, DELAYS, DISCHARGE, CARGO, TANK CLEANING, REPAIRS, ETC.)	OFFICER ON WATCH
01:10	BEAR MT bridge	
01:30	AGROUND AT buoy 21, barge NEW LONDON, LEAKING 40IL FROM #1 & 2 port, snowing hard at time of accident CAN buoy 21 was under this ice, could not be seen on Radar	
01:45	TURN AROUND went to Day Line pier	
02:15 ⁰⁰	barge AT Day Line Dock, barge taken water in Forepeak M. E. Plume,	
0730	LUG SHELIA MORAN PUT BGE #22 ALONG SIDE NEW LONDON to TAKE CARGO, STAND BY-	
15:15	Finish Discharging V	
16:25	UNDER BARGE UNDERWAY FROM DAY LINE DOCK	
0310	LANDED NEW LONDON AT STD-TANK BAYONNE	
0830-2400	STAND BY BGE CORTLAND DISCHARGING AT B-TW.	

RED STAR'S EXHIBIT 9

RED STAR'S EXHIBIT 9

DATE Mon Feb 4, 1974

TIME	REMARKS: (INCLUDE EXPLANATORY OPERATIONAL DATA SUCH AS ARRIVAL AND DEPARTURE, LOADING AND TOWING OPERATIONS, DELAYS, DISCHARGE, CARGO, TANK CLEANING, REPAIRS, ETC.)
01:30	Shifted Courtland to Standard Tank
02:55	hargo secured at Standard
03:05	Along side Hartford, loading at same berth
03:30	stand by Courtland waiting orders
05:15	Lt to CLAREMONT TERMINAL
06:15	s/s ZUBIZARRETTA CLAREMONT TERM-
08:15	to RED HOOK ANCHORAGE
08:15	Lt to BUSHEYS YARD.
08:45	STAND BY FOR ORDERS AT BUSHEYS.
09:30 - 09:45	Lt Jug Busheys - Erie Basin.
09:45	PRY DOCK AFD-L H44 FROM DRY DOCK to
13:15	PRH 5 ERIE BASIN.
13:15 - 13:45	Lt ERIE BASIN to PRH 4 ARMY BASE BRNLYN
13:45	14:15 s/s POINT BARROW FR PRH 4 - A-B - to STREAM
14:15	RELIEVED by tug PROVIDENCE. Lt to PRH 4 CRR
16:05	SEOWS RED STAR #91-92 Lt PRH 4 CRR to PRH 45-N/
16:05	Lt to METRO N.Y.C.
17:00 - 19:25	BH 90 Lt METRO N.Y.C. to METRO 138 ST BRONX.
19:30 - 19:40	Pl Jug. 2:135 th SI - Pier 2 Bush.
20:50 - 22:10	Lt Bge Utica Scow - Pier 2 Bush - Stapleton Canal
22:10 - 23:20	Stand by at Pier 5
23:30 - 24:00	Lt Jug Pier 5 - Cox Hook

R
ADDR28
J

PHON

90

DATE

12/1

Mo./D

Z-NU

75

RELIC

MARR

YES

(circle)

WIFE

Work

(Last, First Middle) <u>Reiner, Walter</u>		NEXT OF KIN TO BE CONTACTED FOR OFFICE USE	
ADDRESS (Include Zip Code) <u>283 BAIRDEN RD.</u> <u>JACKSONVILLE, FLA.</u> <u>32218</u>		In Case of Emergency Name: <u>WALTER REINER JR.</u> Relationship: _____ Address: _____ Phone: _____	
ONES (Include Area Code) <u>904-757-5133</u>		NAME OF PHYSICIAN Dr. _____ Phone: _____	
DATE OF BIRTH <u>2-23-30</u> ./Day/Year	POSITION <u>MATE</u>	OTHERS TO CONTACT Name: _____ Relationship: _____ Phone: _____	
NUMBER <u>754900</u>	PAY NUMBER	Tankerman Endorsement _____ Class: _____ Radio Operator's License No. _____ Class: _____ Radar Operator's License No. _____ Class: _____ Deck Officer's License No. _____ Class: _____ Issue No. _____ Date of Issue _____ Expires _____ Waters: <u>U.S. TERRITORIES</u>	
RELIGION <u>—</u>	SOCIAL SECURITY # <u>110-24-0150</u>	I know: Harbor, _____ Transport, _____ Sound, _____ Creek, _____ Canal, _____ Coast Work, _____	
MARRIED YES NO (circle)	DEPENDENT CHILDREN # <u>3</u>	I can operate: Loran, _____ R. D. F., _____ Twin-Screw, _____ P. D. R., _____ Sextant, _____ Autopilot.	
WIFE'S FIRST NAME <u>Marlene</u>			
Work Phone: <u>None</u>			

22
 April
 Operator Dulano
 Operator 200 miles
 Faded for Oceanic-200

RED STAR'S EXHIBIT 17

Half-Atlantic Towing Co.
3½ yrs. Mate
Helford to San Juan

Whitehead 4 yrs. Mate
Jacksonville to San Juan.

Peking Bros. - 4 yrs.
as A.B.

140775 - resigned - did not want
to work North.

RED STAR'S EXHIBIT 18.

CHANGE OF ADDRESS

PREVIOUS EMPLOYERS

DATE	NEW ADDRESS	PHONE NUMBER	FROM	TO	FIRM NAME	JOB	REASON

LEAVES			UNEMPLOYMENT INSURANCE		
FROM	TO	TYPE	DATE	FORM	REMARKS

BENEFIT ENROLLMENTS	ALIEN REGISTRATION NUMBER

ADDITIONAL LICENSES
<i>Ocean 200 m</i> <i>Inter-l</i> <i>Western Rivers</i>

AREA PILOTAGE

HOME ADDRESS

283 Baisden Rd.
 Jacksonville, Florida 32218

(FOR OFFICE USE ONLY)

DATE OF BIRTH	RELIGION	SENIORITY DATE
12-23-30		
PAYROLL NO.	Z NUMBER	W-4 EXEMPTIONS
5221	754900	5
☒ ORAN ☒ R.D.F. ☒ TWIN SCREW ☒ P.D.R. ☒ SEXTANT ☒ AUTO PILOT	☒ LEAF FOR ☒ LEAF SP. ☒ SOUND ☒ CREEK ☒ CANAL ☒ COAST	TANKERMAN'S ENDORSEMENT 2 154900 CLASS: 154900 RADIO OPER. LICENSE 2 5149 CLASS: RADAR OPER. LICENSE 03229 CLASS:
ENGINEER OFFICERS LIC. NO.	DECK OFFICERS LIC. NO.	
	03229	
EXP: 6/78 ISS: 6/13		

IN CASE OF EMERGENCY NOTIFY:

Mr. L. R. R. R.

904 757-5133

PHONE NO. RELATIONSHIP:
 LAST NAME FIRST NAME MIDDLE

REFINER WALTER

DOCTOR'S NAME

PHONE NO.
 SOCIAL SECURITY NUMBER

110-24-0158

DETECTIVE SERVICE CATEGORY

POSITION

MATE

HOME PHONE NUMBER

904-757-5133

[illegible]

FL	ESBO LINE	NORTH LINES	SALE
5/19			
1 R/L		NORTHPORT	REPORT.
5/19			
1 R/L		REPORT	PER
WATER + S/B			
FL		P.S.I	EN ROUTE

BEE	NEW LONDON	ENROUTE	CON BOOK 15 LBS	0001	0130
"	"	CON BOOK NO.	DECK MTN DRILLING	0130	0130
	5/1	RANGE HAS HOLE	S. FORD 142	THUR	-
JEE	NEW LONDON	DECK MTN DRILLING	BAYO. STD. TANK	1525	2310
	5/3				

DATE FEB 3 1974

36

RED STAR'S EXHIBIT 23.

Officer in Charge
Marine Inspection
U.S. Coast Guard
Battery Park Bldg.
New York, N.Y. 10004

5943/029180/ALW
17 December 1974

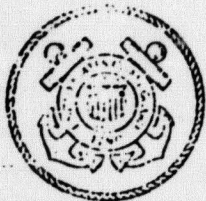
From: Investigating Officer, New York
To: Commandant (C-MVI)
Via: (1) Officer in Charge, Marine Inspection, New York
(2) Commander, Third Coast Guard District (m)

Subj: TB NEW LONDON, O.N. 266258 in tow of MV OCEAN PRINCE, O.N. 276641; grounding in Hudson River, N.Y. on 3 February 1974 with no loss of life

1. Investigation of subject case is complete. A narrative report will not be submitted.
2. The proximate cause of the casualty was the inability of the operator of the OCEAN PRINCE to ascertain his position due to icing over of the available aids to navigation and poor visibility.
3. On 3 February 1974 the tug OCEAN PRINCE, with the loaded TB NEW LONDON being pushed ahead, was proceeding north in the Hudson River in the vicinity of Con Hook Island. At approximately 0130, as the operator was unable to ascertain his position using radar and searchlight due to icing over of the shoreline; icing over of navigational aids, and snow storm conditions, the tow went inside of the location of Buoy #21 (LLNR 1870) and touched bottom.
4. The TB NEW LONDON sustained damage in way of forward rake port and starboard, tanks #5, #6, #7, #8 port, and pump room aft. No damage was sustained by the OCEAN PRINCE. Repairs were completed under the cognizance of the OCMI, New York.
5. Approximately 22,000 gallons of #4 fuel oil were released as a result of the grounding. Notification of the spillage was made to the Captain of the Port, New York, which handled the subsequent clean-up.
6. There was no other damage or injury as a result of this casualty.
7. Aspects of this casualty involving pollution and violation of law have come under the cognizance of COTP, New York.
8. Recommend that this case be closed.

J. P. WHITELEY
LTJG, USCG

Encl: (1) CG 2692 OCEAN PRINCE
(2) CG 2692 NEW LONDON



RECEIVED

MAILING ADDRESS:
U.S. COAST GUARD (GMVI-3/83)
400 SEVENTH STREET SW
WASHINGTON, D.C. 20540
PHONE 202 426-1455

DEC 10 1974

5943/42763
9 December 1974

MARINE SAFETY DIV.
THIRD CG DISTRICT

• From: Commandant
To : OCMI, New York, New York
Via : Commander, Third Coast Guard District (m)

Subj: TB NEW LONDON, O.N. 266528; in tow of MV OCEAN PRINCE, O.N. 276641;
grounding in Hudson River, N.Y. on 3 February 1974 with no loss of life

1. It is requested that the following corrections, additions, or revisions be made to the subject report. Subject report is returned herewith.

-(10-3-90 MMSM)

2. The following items were not forwarded with the subject report:

Form CG 2692 (10-2-15 A/C/F MMSM)
Form CG 924E (10-2-15 B/C/J MMSM)
Form CG 4626 (10-2-15 (J) MMSM)
Form CG 4727 (COMDTINST 5943.6)
OCMI Endorsement (10-2-15G/10-3-80 MMSM)
District Commander Endorsement (10-2-15G/10-3-80 MMSM)
Shipping Articles/Log Entries (10-4-5B(6) MMSM)
Death Certificate (10-4-5B(7) MMSM)
Enclosure # (10-3-35(G) MMSM)

Attachment to _____

Other

3. The revised report should contain comment on notification⁴ appropriate personnel with regard to paragraph 5.

4. The following item(s) need(s) clarification paragraph 7 of report is not supported by paragraph 5, which mentions violation of law.

5. Remarks:

W. E. WHALEY, JR.
By direction

RED STAR'S EXHIBIT 23a

(m)
11 December 1974

FIRST ENDORSEMENT - Comdt's ltr 5943/42763 of 9 Dec 1974

From: Comma. Third Coast Guard District
To: OCMI, New York, New York

Subj: TB NEW LONDON, O. N. 266528; in tow of MV OCEAN PRINCE, O. N. 276641;
grounding in Hudson River, N.Y. on 3 February 1974 with no loss of
life

1. Forwarded for compliance.

G. J. Weidner
G. J. WEIDNER
By direction

RED STAR'S EXHIBIT 23b.

STATION
AST GUARD
24 (1-70)ADDENDUM TO U. S. TOWING VESSEL CASUALTY
INVESTIGATIONForm Approved Bureau of Bu-Get
No. 04-R3064
Approval Expires 30 June 1971

TO BE FILLED IN BY INVESTIGATING OFFICER

NAME OF VESSEL OCEAN PRINCE		OFFICIAL NUMBER 276461	PROPULSION (gasoline, diesel, steam, Other (Specify)) DIESEL	TOTAL HORSE-POWER 1800
1. SERVICE				
☐ HARBOR TUG (Vessel assistance)		☐ RIVER INLAND TOWING		
☒ HARBOR/INTERCOASTAL TUG		☐ SWITCHER		
☐ OCEAN/OFFSHORE TOWING		☐ OTHER (Specify)		
2. PERSON-IN-CHARGE OF NAVIGATION (OR WHEELSMAN)			Z# OR SOCIAL SECURITY NUMBER 2-754900	
AGE 43	YEARS EXPERIENCE IN SIMILAR CAPACITY 7	LITERATE ☒ YES ☐ NO	DUTY SCHEDULE 6 HRS ON 6 HRS OFF	NUMBER OF HOURS PRIOR TO CASUALTY ON DUTY 1.5
LICENSED BY COAST GUARD ☒ YES ☐ NO				
TYPE OF LICENSE TOW BOAT OPERATOR				
☐ MOTORBOAT OPERATOR		☐ OPERATOR/OCEAN OPERATOR		☐ MASTER
☐ MATE		☐ 1ST CLASS PILOT		☐ 2ND CLASS PILOT
ROUTE 200 MILES OFFSHORE				
☐ OCEAN		☐ COAST WISE		☐ GREAT LAKES
☐ LAKES, BAYS AND SOUNDS		☐ RIVERS		☐ OTHER (Specify)
TONNAGE				
☐ UNLIMITED		☒ LESS THAN 200 GROSS TONS		
3. ENGINEERING CASUALTY:		Z# OR SOCIAL SECURITY NUMBER		LICENSED BY COAST GUARD
PERSONNEL INVOLVED				☐ YES ☐ NO
TYPE OF LICENSE		TYPE PROPULSION		HORSEPOWER LIMITATION
☐ CHIEF ENGINEER		☐ STEAM		☐ UNLIMITED
☐ ASSISTANT ENGINEER		☐ MOTOR		☐ LESS THAN
FLANKING OR BACKING RUDDERS INSTALLED		NO. OF SCREWS 1		WHISTLE LIGHT INSTALLED ☒ YES ☐ NO
☐ YES ☒ NO				IF ENGINE BACKED PRIOR TO CASUALTY, WAS ENGINE BACKED FULL ☐ YES ☒ NO
PILOT HOUSE CONTROLLED ☒ YES ☐ NO				
MANNED ENGINE ROOM ☐ YES ☒ NO				
4. MANNER OF TOWING				
☒ PUSHING AHEAD ☐ TOWING ASTERN ☐ HIP BREAST TOW ☐ OTHER (Specify)				
LENGTH OF HAWSER				
WAS TOW INTEGRATED?		NUMBER OF BARGES		TOTAL CARGO TONNAGE (Long tons)
☒ YES ☐ NO		LIGHT 1 LOADED 1		
TOTAL LENGTH OF TOW (Excluding towboat)			MAXIMUM WIDTH OF TOW	
FEET			FEET	
ENCLOSE rough sketch or chart of area indicating wind and current direction and force, tow configuration including nature and tonnage of cargo on each barge. If empty tank barge in tow and not gas free include last cargo.				

RED STAR'S EXHIBIT 23b

5. COLLISION <i>N/A</i> HOW WAS INITIAL CONTACT MADE? ☐ RADIO ☐ RADAR ☐ WHISTLE ☐ VISUAL ☐ OTHER (Specify)		WAS LOOKOUT POSTED? ☐ YES ☐ NO	WHERE WAS LOOKOUT LOCATED? ☐ HEAD OF TOW ☐ OTHER (Specify)
MEANS OF COMMUNICATION BETWEEN WHEELHOUSE AND LOOKOUT WERE WHISTLE SIGNALS GIVEN? ☐ YES ☐ NO WERE WHISTLE SIGNALS RECEIVED? ☐ YES ☐ NO		BRIDGE TO BRIDGE RADIOTELEPHONE: CAPABILITY ON BOARD? ☐ YES ☐ NO RECEIVER IN OPERATION? ☐ YES ☐ NO WERE COMMUNICATIONS ATTEMPTED? ☐ YES ☐ NO DID OTHER VESSEL RESPOND? ☐ YES ☐ NO WHAT CHANNEL/FREQUENCY USED?	
CARGO LOSS ☐ YES ☐ NO		RELEASED TO ☐ AIR ☐ WATER	
SPECIFIC CARGO(S) →			
AMOUNT(S)	gal	gal	gal
	bbl	bbl	bbl
	tons	tons	tons

6. HAZARD OR POTENTIAL HAZARD TO:			
☐ POPULATION	☐ LIGHT	☐ MODERATE	☐ SEVERE
☒ MARINE/WILDLIFE	☐ LIGHT	☐ MODERATE	☒ SEVERE
☐ NAVIGATION	☐ LIGHT	☐ MODERATE	☐ SEVERE
☐ PUBLIC NUISANCE	☐ LIGHT	☐ MODERATE	☐ SEVERE

7. COULD CASUALTY HAVE BEEN PREVENTED OR MINIMIZED IF:			
A. BRIDGE-TO-BRIDGE RADIOTELEPHONE USED?	☒ UNLIKELY	☐ POSSIBLY	☐ UNKNOWN
B. LICENSED DECK PERSONNEL IN CHARGE?	☒ UNLIKELY	☐ POSSIBLY	☐ UNKNOWN
C. LICENSED ENGINEERING PERSONNEL ABOARD?	☒ UNLIKELY	☐ POSSIBLY	☐ UNKNOWN
D. VESSEL WAS INSPECTED BY COAST GUARD?	☒ UNLIKELY	☐ POSSIBLY	☐ UNKNOWN
E. WAS TOWBOAT OF SUFFICIENT HORSEPOWER FOR EXISTING LOAD AND CONDITIONS?	☒ YES	☐ NO	☐ UNKNOWN

WAS ACTIONABLE NEGLIGENCE INVOLVED?	☐ YES	☒ NO
WAS RS 4450 ACTION INSTITUTED?	☐ YES	☒ NO
WOULD RS 4450 ACTION BE INDICATED IF PERSONNEL LICENSED OR CERTIFICATED?	☐ YES	☒ NO
IS REPORT OF STRUCTURAL FAILURE, COLLISION DAMAGE OR FIRE DAMAGE TO INSPECTED VESSEL ENCLOSED (CG-2752)?	☐ YES	☒ NO

REMARKS

UNITED STATES GOVERNMENT

RED STAR'S EXHIBIT 24.

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD*Memorandum*

16700/1

DATE: 1 April 1977

SUBJECT: History of vessel groundings on charted rock south of Con Hook Light,
as reflected by MIO NY files; report concerning

FROM: Senior Investigating Officer, USCG MIO NY, NY

TO: Mr. Janis Schulmeisters, Admiralty & Shipping Division, U.S. Justice Dept.

Ref: (a) TELECON between CDR Blomquist and Mr. Schulmeisters on 21 March 1977

1. As discussed in reference (a) we have completed a thorough search of our files at your request. LT DUPREE of this office conducted the search during a one (1) week period. The search was made in the following manner:

a. All vessel grounding files at the Battery Park Building for the period of 1971 through February 1974 (dates requested by Mr. Schulmeisters).

b. All existing vessel grounding files at the Federal Records Center in Bayonne, NJ, which date back to 1 January 1967. It should be noted that the following files were missing. A check with U. S. Coast Guard Headquarters disclosed the casualty dates and locations as those indicated below:

<u>CASE NO.</u>	<u>VESSEL NAME</u>	<u>DATE</u>	<u>LOCATION</u>
026611	PITTSON #40	6/12/69	Faulker Island, Conn.
026475	PITTSTON #40	5/5/69	Crane Reef, Long Is. Sound
026316	PITTSTON #3	3/18/69	Saddle Bags Shoal, Hudson River
026216	T/V N. W. GOKEY	10/8/68	Boston Harbor
026208	ESSO BARGE #26	1/17/69	New York Harbor

c. It was determined that all casualty files which pre-date 1 January 1967 have been destroyed.

2. The above search disclosed two (2) casualty files which concerned vessels grounding on the charted rock in question. These casualties occurred as the result of the grounding of the following vessels: T/B NEW LONDON while under tow of the OCEAN PRINCE on 3 February 1974 (Case #029180) and the grounding of the T/B GEORGE T. TILTON, O.N. 515676 in tow of the M/V BART TURECAMO, O.N. 515484 on 28 February 1973.

3. In addition I am enclosing copies of the file (Case #025146) requested by the attorney for the plaintiff.

4. If we can be of further assistance please call this office.

Encl: (1) File 025146
Copy to: CCGD3(d1), attn: Mr. English

H. T. BLONQUIST
Commander, U. S. Coast Guard

RED STAR'S EXHIBIT 26.

Officer in Charge
Marine Inspection
U. S. Coast Guard
Battery Park Bldg.
New York, N. Y. 10004

5943/022655/3KB

MAY 21 1973

From: Investigating Officer, New York
To: Commandant (CIVIL)
Via: (1) Officer in Charge, Marine Inspection, New York
(2) Commander, Third Coast Guard District (m)

Subj: TB GEORGE T. TILTON, O.N. 515676, in tow of MV BART TURECAMO, O.N. 515484;
grounding in Hudson River, New York, 26 February 1973, with no loss of life

- Findings of Fact -

1. On 26 February 1973 the TB GEORGE T. TILTON, O.N. 515676 in tow of MV BART TURECAMO, O.N. 515484 grounded in the vicinity of buoy No. 25 (LLNR 1874).

2. The vessels' data is as follows:

NAME:	BART TURECAMO	GEORGE T. TILTON
OFFICIAL NO:	515484	515676
SERVICE:	Tow Boat	Tank Barge
GROSS TONS:	266.85	4,361.65
NET TONS:	181	4,361.65
LENGTH:	96.6 ft.	334.1 ft.
BREADTH:	28.1 ft.	64.1 ft.
DEPTH:	11.5 ft.	23.8 ft.
PROPULSION:	Diesel	NA
HORSEPOWER:	2,880	NA
HOME PORT:	Wilmington, Del.	Wilmington, Del.
OWNERS:	Turecamo Transportation Corp. 1752 Shore Parkway Brooklyn, N.Y.	Turecamo Transportation Corp. 1752 Shore Parkway Brooklyn, N. Y.
MASTER:	William Vogel	NA
License:	NA	NA
LAST INSPECTION (For Certification)		
Date:	NA	22 July 1972
Port:	NA	Portsmouth, Va.

3. The weather at the time of the casualty is as follows:

Visibility:	2 miles - with a vapor haze on surface, snow approaching
Air Temperature:	30°F
Wind:	Northeast at 15 knots
Tide:	Flood (030°T at 4 knots)

RED STAR'S EXHIBIT 26

L. O. NY rpt 5943/023655

4. All times in this report are Zone Description +5.

5. On 26 February 1973 the TB GEORGE T. TILTON in tow of the MV BART TURECAMO departed Staten Island, N. Y. enroute to Mobil Oil Co., Albany, N. Y. While proceeding up the Hudson River the vessels encountered approximately a 90% ice cover and as the tow entered the area of Bear Mountain Bridge, N. Y. the ice cover increased to 100%. The ice cover made the shoreline and river appear as one large target on the radar, thereby rendering the radar useless. There was a vapor haze on the surface of the ice and a snowstorm was also approaching the area. This made piloting by seaman's eye difficult. At approximately 0230 on 26 February 1973 the GEORGE T. TILTON grounded at buoy No. 25 (LLNR 1874). The pilot had reported that he was searching for the buoy with the vessel's searchlight when the grounding occurred. It was later determined that the buoy in question was submerged under the ice floe at the time of the casualty.

6. After grounding close aboard to buoy No. 25 (LLNR 1874) the buoy suddenly surfaced from under the ice. The captain then realized that he had grounded and called for assistance. The TILTON received assistance from the Coast Guard Cutter MAMMONING and the MV CHESAPEAKE SUN.

7. The GEORGE T. TILTON received damages in way of holing in the forepeak tank and No. 1 port cargo tank. It is also estimated that 3,000 gallons of gasoline leaked from the TILTON into the Hudson River. The repairs to the TB TILTON were completed under the cognizance of the Officer in Charge, Marine Inspection, Norfolk, Va. on 12 April 1973. There was no damage to the MV BART TURECAMO.

RED STAR'S EXHIBIT 26

I. O. NY rpt 5943/208655

- Conclusions -

1. That the GEORGE T. TILTON grounded as a result of restricted visibility in the Constable Hook, N. Y. area and buoy No. 25 being under the surface of the ice.
2. That there is no evidence of actionable misconduct, negligence or incompetence on the part of any persons involved in the casualty.
3. That there is no evidence that any personnel of the Coast Guard or any other government agency contributed to the casualty.

- Recommendations -

1. It is recommended that this case be closed.

B. K. BIRD
LTJG, USCG

Encl: (1) CG 2692 MV BART TURECAMO
(2) CG 2692 TB GEORGE T. TILTON
(3) Chart of area in question

MAY 21 1973

FIRST ENDORSEMENT on I. O. NY rpt 5943/028655

From: Officer in Charge, Marine Inspection, New York
To: Commandant (CMVI)
Via: Commander, Third Coast Guard District (m)

1. Forwarded, approved.

E. J. SULLIVAN
By direction

TUN

river 3(13-20)

Station	Elevation
1	100
2	100
3	100
4	100
5	100
6	100
7	100
8	100
9	100
10	100
11	100
12	100
13	100
14	100
15	100
16	100
17	100
18	100
19	100
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86	100
87	100
88	100
89	100
90	100
91	100
92	100
93	100
94	100
95	100
96	100
97	100
98	100
99	100
100	100

RED STAR'S EXHIBIT 26

Fort Hill

730

300

200

100

50

0

50

100

200

300

400

500

600

700

800

900

1000

1100

1200

1300

1400

1500

1600

1700

1800

1900

2000

2100

2200

2300

2400

2500

2600

2700

2800

2900

3000

3100

3200

3300

3400

3500

3600

3700

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9900

10000

10100

10200

10300

10400

10500

10600

10700

10800

10900

11000

11100

11200

11300

11400

11500

11600

11700

11800

11900

12000

12100

12200

12300

12400

12500

12600

12700

12800

12900

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13100

13200

13300

13400

13500

13600

13700

13800

13900

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26900

RED STAR'S EXHIBIT 26.

State of New York
County of Albany

Horton Koppert, being duly sworn, deposes
and says:

I am an A.B. Tonnage Deckhand (Z104-1575-D.T.)
on the Barge George Tilton - Tug Boat Tonnage. I was
on watch on Feb 26, 1973 from 0001 hours to 0060 hours
while we were bound north in the Hudson River,
loaded. at about 0225 I left the Pilot House
to get the Captain some fresh coffee. While in
the galley I felt the tug's engine slowed. In
a few minutes I felt the tug and knew we
had struck something. Captain Vogel was
steering and watching the Radar and using
the Search Light. That is all I know about
striking the Rock.

Sworn to before me
this 27th day of
February 1973

Horton Koppert
2/27. 0925

EDWARD J. RYAN
Notary Public, State of New York
No. 30-6721400
Qualified in Nassau County
Certificate filed in New York County
Term Expires March 30, 1977

RED STAR'S EXHIBIT 26

TREASURY DEPARTMENT
U. S. COAST GUARD
CG-2692 (Rev. 4-61)

REPORT OF VESSEL CASUALTY OR ACCIDENT

Form Approved Budget Bureau
No. 43-R114.5

REPORTS CONTROL SYMBOL
MVI-4017

INSTRUCTIONS

1. An original and two copies of this form shall be submitted, without delay, to the Officer in Charge, Marine Inspection, in whose district the casualty occurred, or in whose district the vessel first arrived after such casualty.
 2. If the person making the report is a licensed officer on a vessel required to be manned by such officer, he must make the report in writing and in person to the proper Marine Inspector. If because of distance it may be inconvenient for such an officer to submit the report in person, he may submit the required number of copies by mail. However, to avoid delay in investigations, it is desired that reports be submitted in person.
 3. This form should be completed in full; blocks which do not apply to a particular case should be indicated as "NA". Where answers are unknown or none, they should be indicated as such. All copies should be signed.
- NOTE: (1) Report all deaths and injuries, which incapacitate in excess of 72 hours, on CG-924E whether or not there was a vessel casualty.
(2) Attach separate Form CG-924E to this report for each person killed or injured and incapacitated in excess of 72 hours as a result of the vessel casualty reported herein.

TO: Officer in Charge, Marine Inspection, Port of **Albany** DATE SUBMITTED **Feb. 23, 1973**

I PARTICULARS OF VESSEL

1. NAME OF VESSEL BART TURECAMO	2. OFFICIAL NUMBER 515484	3. HOME PORT Wilmington, Del.	4. NATIONALITY U.S.A.
5. TYPE OF VESSEL (Pri., pass., trn., etc.) Towing	6. PROPULSION (Steam, diesel, etc.) Diesel	7. GROSS TONNAGE 266.85	8. REGISTERED LENGTH OR L.O.A. 96.6
9. HULL MATERIALS Steel	10. YEAR BUILT 1968	11. RADIO EQUIPMENT ☒ TRANSMIT ☒ RECEIVE ☒ VOICE ☐ CW (Key)	
12. (a) RADAR EQUIPPED ☒ YES ☐ NO		(b) IF YES, RADAR OPERATING AT TIME OF CASUALTY ☒ YES ☐ NO	
13. (a) CERTIFICATE OF INSPECTION ISSUED AT PORT OF N/A		(b) DATE CERTIFICATE OF INSPECTION ISSUED N/A	
14. (a) NAME OF MASTER OR PERSON IN CHARGE (Indicate which) William Vogel		(b) DATE OF BIRTH 8/26/1916	(c) LICENSED BY COAST GUARD ☒ YES ☐ NO
15. (a) NAME OF PILOT (If on board at time of accident) N/A		(b) PILOT SERVING UNDER AUTHORITY OF LICENSE ISSUED BY ☐ USCG ☒ N/A ☐ STATE ☐ FOREIGN	
16. (a) NAME OF OWNER(S), OPERATOR(S) OR AGENT (Indicate which) TURECAMO TRANSPORTATION CORP.		(b) ADDRESS OF OWNER(S), OPERATOR(S), OR AGENT 1752 Shore Parkway, Brooklyn, N. Y.	

II PARTICULARS OF CASUALTY

17. (a) DATE OF CASUALTY Feb. 26th, 1973	(b) TIME OF CASUALTY (Local or zone) 0230 E.S.T.	(c) ZONE DESCRIPTION	(d) TIME OF DAY ☐ DAY ☒ NIGHT ☐ TWILIGHT
18. LOCATION OF CASUALTY (Latitude and longitude; distance and TRUE bearing from charted object; dock; anchorage; etc.) Black Buoy No. 21 Con Hook, Hudson River, New York			
19. BODY OF WATER (Geographical name) Hudson River	20. RULES OF THE ROAD APPLICABLE ☒ INLAND ☐ GREAT LAKES ☐ WESTERN RIVERS ☐ INTERNATIONAL ☐ OTHER (Specify)		
21. (a) DID CASUALTY OCCUR WHILE UNDERWAY: ☒ YES ☐ NO			
(b) IF YES, LAST PORT OF DEPARTURE Staten Island, New York		(c) IF YES, WHEN CASUALTY OCCURRED Mobil Oil Co., Albany, New York	
22. (a) WEATHER CONDITIONS WHEN CASUALTY OCCURRED: ☐ CLEAR ☒ PARTLY CLOUDY ☐ OVERCAST ☐ FOG ☐ RAIN ☐ SNOW ☒ OTHER (Specify) (Vapor Haze on Surface of Ice-Snow within 1 hr.)			
(b) VISIBILITY (Miles, yds., ft., etc.) 2 miles	(c) WIND DIRECTION N/E	(d) FORCE IN KNOTS 15	(e) GUSTY ☐ YES ☒ NO
(f) AIR TEMPERATURE 30°			
23. (a) SEA CONDITIONS WHEN CASUALTY OCCURRED Calm-Ice	(b) SEA WATER TEMP (If available) N/A	(c) HEIGHT OF SEA N/A	(d) DIRECTION OF SEA FOOD
(e) HEIGHT OF SWELL ---	(f) DIRECTION OF SWELL ---		
24. (a) NATURE OF CARGO (Specify) None	(b) AMOUNT OF DRY CARGO (Long tons) None	(c) AMOUNT OF BULK LIQUID (Long tons) None	(d) AMOUNT OF DECK LOAD (Long tons) None
25. (a) DRAFT FORWARD 13.5'		(b) DRAFT AFT 14'	
26. (a) TYPES OF LIFESAVING EQUIPMENT USED, IF ANY N/A		(b) NO. LIVES SAVED WITH LIFE-SAVING EQUIPMENT ---	
		(c) LIFESAVING EQUIPMENT SATISFACTORY ☒ YES ☐ NO (If no, explain in Item 34)	

RED STAR'S EXHIBIT 26

27. CREW PASSENGERS OTHER (Specify)				28. ESTIMATED LOSS/DAMAGE TO YOUR VESSEL \$ UNKNOWN	
NUMBER ON BOARD 7 0 0				ESTIMATED LOSS/DAMAGE TO YOUR CARGO \$ UNKNOWN	
DEAD/MISSING 0 0 0				ESTIMATED LOSS/DAMAGE TO OTHER PROPERTY \$	
INCAPACITATED (over 3 days) 0 0 0				(Specify whether vessel, dock, bridge, etc.) NONE	
29. NATURE OF THE CASUALTY (Check one or more of the following. Give pertinent details in Item 30.)					
COLLISION WITH OTHER VESSEL(S) (Specify)			EXPLOSION/FIRE (Other)		
			GROUNDING		
			FOUNDER (Sinking)		
COLLISION WITH FLOATING OR SUBMERGED OBJECTS			CAPSIZING WITHOUT SINKING		
X COLLISION WITH FIXED OBJECTS (Piers, bridges, etc.) ROCK			FLOODING, SWAMPING, ETC. WITHOUT SINKING		
COLLISION WITH ICE			HEAVY WEATHER DAMAGE		
COLLISION WITH AIDS TO NAVIGATION			CARGO DAMAGE (No vessel damage)		
COLLISION (Other)			MATERIAL FAILURE (Vessel structure)		
EXPLOSION/FIRE (Involving cargo)			MATERIAL FAILURE (Engineering machinery, including main propulsion, auxiliaries, boilers, evaporators, deck machinery, electrical, etc.)		
EXPLOSION/FIRE (Involving vessel's fuel)					
FIRE (Vessel's structure or equipment)			EQUIPMENT FAILURE		
EXPLOSION (Boiler and associated parts)			X CASUALTY NOT NAMED ABOVE Tow struck sub-		
EXPLOSION (Pressure vessels and compressed gas cylinders)			merged Rock.		
30. DESCRIPTION OF CASUALTY (Events and circumstances leading to casualty and present when it occurred. Attach diagram and additional sheets, if necessary)					
While proceeding North Bound with loaded Barge GEORGE TILTON, push- formation, port bow of Barge struck submerged Rock at Black Buoy No. 21, Con Hook, Hudson River, New York. Buoy was covered with crushed Ice and could not be picked up by Radar.					
31. DAMAGE (Give brief general description and state if vessel is a total loss.)					
NONE					
III ASSISTANCE AND RECOMMENDATIONS					
32. AUTO ALARM TRANSMITTED BY YOUR VESSEL: ☐ YES ☐ NO					
33(a) ASSISTANCE RENDERED BY STATIONS AND VESSELS (Include Coast Guard and other stations and vessels)			(b) OTHER ASSISTANCE RENDERED		
Called C. G. Cutter MAHONING at West Point			Tug CHESAPEAKE SUN		
34. RECOMMENDATIONS FOR CORRECTIVE SAFETY MEASURES PERTINENT TO THIS CASUALTY (Include explanation of unsatisfactory lifesaving equipment)					
TITLE			SIGNATURE		
Master			William E. Vogel		

TREASURY DEPARTMENT U. S. COAST GUARD CG-2692 (Rev. 4-61)		RED STAR'S EXHIBIT 26 REPORT OF VESSEL CASUALTY OR ACCIDENT		Form Approved Budget Bureau No. 48-R114.5 REPORTS CONTROL SYMBOL MVI-4017	
INSTRUCTIONS					
1. An original and two copies of this form shall be submitted, without delay, to the Officer in Charge, Marine Inspection, in whose district the casualty occurred, or in whose district the vessel first arrived after such casualty. 2. If the person making the report is a licensed officer on a vessel required to be manned by such officer, he must make the report in writing and in person to the proper Marine Inspector. If because of distance it may be inconvenient for such an officer to submit the report in person, he may submit the required number of copies by mail. However, to avoid delay in investigations, it is desired that reports be submitted in person. 3. This form should be completed in full; blocks which do not apply to a particular case should be indicated as "NA". Where answers are unknown or none, they should be indicated as such. All copies should be signed. NOTE: (1) Report all deaths and injuries, which incapacitate in excess of 72 hours, on CG-924E whether or not there was a vessel casualty. (2) Attach separate Form CG-924E to this report for each person killed or injured and incapacitated in excess of 72 hours as a result of the vessel casualty reported herein.					
TO: Officer in Charge, Marine Inspection, Port of Albany				DATE SUBMITTED Feb. 28, 1973	
I PARTICULARS OF VESSEL					
1. NAME OF VESSEL GEORGE T. TILTON		2. OFFICIAL NUMBER 515676		3. HOME PORT Wilmington, Del.	
5. TYPE OF VESSEL (Frt., pass., thr., etc.) Tank Barge		6. PROPULSION (Steam, diesel, etc.) -----		7. GROSS TONNAGE 4361.65	
9. HULL MATERIALS Steel		10. YEAR BUILT 1968		11. RADIO EQUIPMENT ☐ TRANSMIT ☐ RECEIVE ☐ VOICE ☐ CW (Key)	
12. (a) RADAR EQUIPPED ☐ YES ☒ NO		(b) IF YES, RADAR OPERATING AT TIME OF CASUALTY ☐ YES ☒ NO			
13. (a) CERTIFICATE OF INSPECTION ISSUED AT PORT OF New York		(b) DATE CERTIFICATE OF INSPECTION ISSUED -----			
14. (a) NAME OF MASTER OR PERSON IN CHARGE (Indicate which) William Vogel		(b) DATE OF BIRTH 8/26/1916		(c) LICENSED BY COAST GUARD ☒ YES ☐ NO	
15. (a) NAME OF PILOT (If on board at time of accident) -----		(b) PILOT SERVING UNDER AUTHORITY OF LICENSE ISSUED BY ☐ USCG N/A ☐ STATE ☐ FOREIGN			
16. (a) NAME OF OWNER(S), OPERATOR(S) OR AGENT (Indicate which) TURECAMO TRANSPORTATION CORP.		(b) ADDRESS OF OWNER(S), OPERATOR(S), OR AGENT 1752 Shore Parkway, Brooklyn, N.Y.			
II PARTICULARS OF CASUALTY					
17. (a) DATE OF CASUALTY Feb. 26, 1973		(b) TIME OF CASUALTY (Local or zone) 0230 E.S.T.		(c) ZONE DESCRIPTION	
18. LOCATION OF CASUALTY (Latitude and longitude; distance and TRUE bearing from charted object; dock; anchorage; etc.) Buoy Black No. 21 Con Hook, Hudson River, New York		(d) TIME OF DAY ☐ DAY ☒ NIGHT ☐ TWILIGHT			
19. BODY OF WATER (Geographical name) Hudson River		20. RULES OF THE ROAD APPLICABLE ☒ INLAND ☐ GREAT LAKES ☐ WESTERN RIVERS ☐ INTERNATIONAL ☐ OTHER (Specify)			
21. (a) DID CASUALTY OCCUR WHILE UNDERWAY: ☒ YES ☐ NO					
(b) IF YES, LAST PORT OF DEPARTURE Staten Island, New York		(c) IF YES, WHERE BOUND WHEN CASUALTY OCCURRED (Mobil Oil Co.) Albany, N. Y.			
22. (a) WEATHER CONDITIONS WHEN CASUALTY OCCURRED: ☐ CLEAR ☒ PARTLY CLOUDY ☐ OVERCAST ☐ FOG ☐ RAIN ☐ SNOW ☒ OTHER (Specify) (Vapor Haze on Surface of Ice - Snow within 1 hr.)					
(b) VISIBILITY (Miles, yds., ft., etc.) 2 miles		(c) WIND DIRECTION N/E		(d) FORCE IN KNOTS 15	
(e) GUSTY ☐ YES ☒ NO		(f) AIR TEMPERATURE 30°		(g) DIRECTION OF SWELL ----	
23. (a) SEA CONDITIONS WHEN CASUALTY OCCURRED Calm-Ice		(b) SEA WATER TEMP (If available) N/A		(c) HEIGHT OF SEA N/A	
(d) DIRECTION OF SEA FLOOD		(e) HEIGHT OF SWELL ----		(f) DIRECTION OF SWELL ----	
24. (a) NATURE OF CARGO (Specify) Gasoline		(b) AMOUNT OF DRY CARGO (Long tons) NONE		(c) AMOUNT OF BULK LIQUID (Long tons) 69,257 B BLS	
(d) AMOUNT OF DECK LOAD (Long tons) NONE		25. (a) DRAFT FORWARD 18' 3"			
(b) DRAFT AFT 18' 3"		26. (a) TYPES OF LIFESAVING EQUIPMENT USED, IF ANY N/A			
(b) NO LIVES SAVED WITH LIFESAVING EQUIPMENT -----		(c) LIFESAVING EQUIPMENT SATISFACTORY ☒ YES ☐ NO (If no, explain in Item 34)			

RED STAR'S EXHIBIT 26

27	CREW	PASSENGERS	OTHER (Specify)	28	ESTIMATED LOSS/DAMAGE TO YOUR VESSEL	\$ UNKNOWN
NUMBER ON BOARD	0			ESTIMATED LOSS/DAMAGE TO YOUR CARGO	\$ UNKNOWN	
DEAD/MISSING	0	UNMANNED		ESTIMATED LOSS/DAMAGE TO OTHER PROPERTY	\$	
INCAPACITATED (over 3 days)	0			(Specify whether vessel, dock, bridge, etc.)		NONE
29. NATURE OF THE CASUALTY (Check one or more of the following. Give pertinent details in item 30.)						
COLLISION WITH OTHER VESSEL(S) (Specify)			EXPLOSION/FIRE (Other)			
			GROUNDING			
			FOUNDER (Sinking)			
COLLISION WITH FLOATING OR SUBMERGED OBJECTS			CAPSIZING WITHOUT SINKING			
X	COLLISION WITH FIXED OBJECTS (Piers, bridges, etc.) DOCK			FLOODING, SWAMPING, ETC., WITHOUT SINKING		
	COLLISION WITH ICE			HEAVY WEATHER DAMAGE		
	COLLISION WITH AIDS TO NAVIGATION			CARGO DAMAGE (No vessel damage)		
	COLLISION (Other)			MATERIAL FAILURE (Vessel structure)		
	EXPLOSION/FIRE (Involving cargo)			MATERIAL FAILURE (Engineering machinery, including main propulsion, auxiliaries, boilers, evaporators, deck machinery, electrical, etc.)		
	EXPLOSION/FIRE (Involving vessel's fuel)			EQUIPMENT FAILURE		
	FIRE (Vessel's structure or equipment)			CASUALTY NOT NAMED ABOVE		
	EXPLOSION (Boiler and associated parts)			Struck Submerged		
	EXPLOSION (Pressure vessels and compressed gas cylinders)			Rock.		
30. DESCRIPTION OF CASUALTY (Events and circumstances leading to casualty and present when it occurred. Attach diagram and additional sheets, if necessary)						
While proceeding push-tow of tug BART J. TURECAMO, Northbound in Hudson River, port bow, struck submerged Rock at Con Hook.						
31. DAMAGE (Give brief general description and state if vessel is a total loss.)						
Hull Rupture at forepeak and No. 1 port tank.						
III ASSISTANCE AND RECOMMENDATIONS						
32. AUTO ALARM TRANSMITTED BY YOUR VESSEL: ☐ YES ☐ NO						
33(a) ASSISTANCE RENDERED BY STATIONS AND VESSELS (Include Coast Guard and other stations and vessels)				33(b) OTHER ASSISTANCE RENDERED		
Called C. G. Cutter MAHONING at West Point.				Tug CHESAPEAKE SUN		
34. RECOMMENDATIONS FOR CORRECTIVE SAFETY MEASURES PERTINENT TO THIS CASUALTY (Include explanation of unsatisfactory lifesaving equipment)						
TITLE				SIGNATURE		
Master				Capt. E. Vogel		

RED STAR'S EXHIBIT 26

Feb. 27, 1972

The tug Bont J Turcotte was pushing the
by Geo. H. Tilton from Stapleton Anchorage
to Mobil Albany when I was off Stony Pt.,
Jones Pt. & Jones Is. I made security calls
answered by the cutter Malvern. When I
was approaching Indian Pt. I started to run
into ice about 90% coverage, between Jones Is.
and Bear Mt. Br. the ice covered 100% after
passing under the Bear Mt. Br. This ice
packed up ice & shore together making it
impossible to navigate with radar. I then slowed
the tug to 1/2 speed and started to use the
searchlight from shore to shore & also looking
for the Black Can²⁵ ^{W.} The visibility at this
time was good but a haze from the river
made it hard to see distinctly and I learned
at this time from a ship anchored off Malvern
that it was snowing heavily.

RED STAR'S EXHIBIT 26

When approaching Con Hook which was
 on my port side I was looking for but could not
 locate ~~G 25~~ ^{25 W.V.} I then came in contact with
 something at this time I did not know what it
 was until a few minutes later the ~~con~~ ^{25 W.V.} came
 from under the ice I then knew what I was &
 then called Arthur Mahoning. he offered assistance at
 this time but it was not necessary. I then called
 the tug Cheapsake' Son who was off Rockland Lake It
 to return with his barge to lighten the G.T. Tilton
 after lightening the Port Stern & part of tank
 '2. I backed the tug slowly and the barge came
 off. The cutter Mahoning assisted me through
 the ice until relieved by the Monitor which
 assisted me through the ice to off Gooseman Is.
 Continued on to Albany without any further incident
 John E. Vogel

RED STAR'S EXHIBIT 29.

The board, having thoroughly inquired into all the facts and circumstances connected with the incident which occasioned the investigation, and having considered the evidence adduced, finds as follows:

FINDING OF FACTS

1. That the U. S. Coast Guard Cutter SAUK, (WYT-99), at about 1845 on 31 December 1962, stranded on a rocky shoal ^{normally marked by} Lower Hudson River Lighted Buoy 21 (LL. No. 1564), about three-tenths of a mile on a bearing of 210° true from Lower Hudson River Light No. 23 (LL No. 1565) at the south end of Con Hook Island, New York.
2. That the senior personnel aboard the SAUK had been assigned for the following approximate periods prior to grounding:

CO, CHEOSN, W-3 Paul R. CORNELL (27448)	7 months
XO, DEBROWSKI, Daniel J. (285-329) BMC	6 months
Operations Officer, CARR, Samuel (222-813) QMCP	1 month
EO, ASHLEY, James B. (271-509) ENCS	5 months
3. That the BMC was the XO and was qualified for both inport and underway watches.
4. That the QMC was the Operations Officer and was qualified for inport watches but not qualified for underway watches.
5. That the CO and XO, the only qualified underway OD's, had never navigated the HUDSON RIVER north of Pier 69, New York, N. Y.
6. The GROUP COMMANDER, NEW YORK had issued instructions that CO's of assigned tugs would sail with their vessels unless they had been granted permission not to do so by that command.
7. Due to the fact that the SAUK had been on immediate standby duty, and due to high winds and low temperatures with intermittent snow squalls on 30 and 31 DECEMBER 1962, she had been on extensive SAR operations from 0800 SUNDAY, 30 DECEMBER, following through the day and night until approximately 1000 on the morning of 31 DECEMBER 1962.
8. She had proceeded to BASE St. George to pick up the liberty party and take on water at approximately 1100, 31 DECEMBER 1962. While there the SAUK received information by radio from GROUP COMMANDER, NEW YORK concerning her possible ice operations.
9. There is some question as to whether the SAUK had on board at the time of her departure the most recent plan for icebreaking, which was undated, from GROUP COMMANDER, NEW YORK.
10. The SAUK was ordered to proceed and assume icebreaking duties in the HUDSON RIVER, under orders of GROUP COMMANDER, NEW YORK by priority message 311645Z, received at 1214, 31 DECEMBER 1962.
11. The Commanding Officer, SAUK stated his intentions in a message to GROUP COMMANDER, NEW YORK, 311905Z, indicating that he would depart BASE St. George at 311910Z, ETA NEWBURGH 010010Z JANUARY 1963.

RED STAR'S EXHIBIT 29

12. The FIREBUSH had been requested for icebreaking by the GROUP COMMANDER, NEW YORK because the Maritime Strike in NEW YORK HARBOR had caused an increased workload on the tugs of GROUP, NEW YORK. The FIREBUSH was assigned OPCON of GROUP NEW YORK by CCGD3 for icebreaking duties at approximately noon on 31 DECEMBER 1962. Due to her previous operating schedule she would not be available to proceed upriver until about 0800, 1 JANUARY 1963.
13. The SAUK received a daily ice report on the HUDSON RIVER on 31 DECEMBER 1962, CCGD3 msg 311453Z, as indicated by BASE St. George Delivery Sheet showing that Charles A. TAYLOR, EM3 had receipted for the message. Time of delivery was not indicated. This message indicated that ice would be encountered at STONY POINT, consisting of 20% coverage, slush 1 inch.
14. The CO, SAUK had not read the HUDSON RIVER section of the U. S. Coast Guard Pilot #2 prior to departure on the mission.
15. The SAUK proceeded from BASE, St. George via the UPPER BAY to the HUDSON RIVER on her assigned duties.
16. The QMC had never laid out courses to be steered up the HUDSON RIVER prior to those charted on EXHIBIT #1.
17. No speed curve or table (RPM vs KNOTS) had been made since installation of the new propeller in OCTOBER 1962.
18. Slush ice was first encountered above the GEORGE WASHINGTON BRIDGE.
19. While proceeding up the river the vessel experienced sets to port, necessitating 2 or 3 degree course changes to starboard.
20. The CO modified some of the tracks charted by the QMC while en route upriver.
21. While passing through the TAPPAN ZEE, several barges under tow, proceeding down river, altered course to follow in the SAUK's track.
22. In the vicinity of STONY POINT LS a message was received, via that unit, that the SAUK would be relieved the following day (1 JANUARY) and upon relief was to return to MOORINGS, MANHATTAN. At this time the CO, SAUK decided to moor at the MILITARY ACADEMY DOCK, WEST POINT rather than proceed to NEWBURGH as previously planned.
23. The last speed check, made between the hours of 1700 and 1800, indicated the ship was making good approximately 10.5 knots over the ground.
24. The log book contains an entry - "1735 broke ice track for OCEAN PRINCE with two barges who was in company with Tug CARDINAL".
25. The SAUK proceeded up the river without incident until arriving in the vicinity of FISH ISLAND, just south of KONA ISLAND, at which time the radar went out temporarily and was out for a period of approximately five minutes.

RED STAR'S EXHIBIT 29

26. The CO returned the radar to operation by bumping it with his hand.
27. A CR-103 radar, manufactured by RCA, is installed aboard the SAUK. It is equipped with 1, 3, 8 and 20-mile range scales. The radar has no gyro repeater input. It is limited to relative bearings and there is no way of determining ranges in yards.
28. The three-mile scale is normally used in local navigation in NEW YORK HARBOR and was the scale being used at the time of grounding. When changing the range scales it takes from 3 to 5 minutes to obtain a clear presentation on the new scale.
29. The buoys and ice encountered by the SAUK en route NEWBURGH were not being detected by radar.
30. The SAUK personnel did not visually sight any buoys after dark en route up the HUDSON RIVER. No attempt was made to locate buoys by searchlight.
31. No visual or radar fix was charted en route.
32. No attempt was made at any time to determine the SAUK's position by dead reckoning.
33. In the vicinity of BEAR MOUNTAIN BRIDGE the SAUK started to encounter large patches of windrowed ice, slowing the vessel down.
34. The position of the SAUK as it went under the BEAR MOUNTAIN BRIDGE was determined to be in the center of the span. The course was changed to 031 p.g.c. toward CON HOOK ISLAND.
35. LOWER HUDSON RIVER LIGHT 23, LL 1565, was first sighted at a distance of approximately one and a half miles.
36. The time of sunset on 31 DECEMBER was 1638 and the end of evening twilight was 1707.
37. No one was specifically assigned as lookout during the trip up the river.
38. There was no regular underway bridge and lookout watch list posted for this particular operation. Normally the CO stands most of the underway OD watches.
39. Radar and visual observations were the means of navigation on this trip.
40. The only gyro repeater available for taking visual bearings is located on the partially raised deck, aft of the pilot house, making over-the-bow bearings difficult if not impossible, to observe. There are no wing repeaters or peloruses.
41. While in the vicinity of LOWER HUDSON RIVER STATION BUOY NO. 21, LL 1564, the SAUK went hard aground, approximately three-tenths of a mile on a bearing of 210° t. from LOWER HUDSON RIVER LIGHT NO. 23, LL 1565.

RED STAR'S EXHIBIT 29

42. A short time before grounding the course was changed from 031 p.g.c. to 035 p.g.c.
43. At the time of grounding the SAUK was underway at approximately 245 shaft RPM (about 12 KNOTS), maximum being 280 RPM.
44. Both the fore and aft drafts of the SAUK at the time of grounding were 11'8".
45. At the time of grounding the CO, SAUK was at the radar, CARR, QMC was the helmsman and DEBROWSKI, BMC was on the starboard side of the bridge looking out the port.
46. Upon striking, the ship veered sharply to port and immediately took a heavy list to port.
47. The machinery was secured a short time after grounding, excepting the port auxiliary generator.
48. Shortly after grounding it was determined that all the hatches and doors had been secured and the ship was taking an increased list.
49. A MAYDAY call was sent out by radio. This call was intercepted by CAPE MAY, NORFOLK and NEW YORK Radio Stations.
50. Shortly after grounding the CO and ASHLEY, ENCS, inspected the watertight compartments with the exception of the lazarette and found all compartments dry excepting the motor room, which was found to be taking on water through a natural ventilator.
51. The CO passed the word ^{the} verbally for all hands to put on life jackets and to free the life rafts. These were accomplished.
52. The ship's boat could not be freed due to the inaccessibility of the after outboard gripe.
53. Contact was made with the shore by means of a flashing light and red Very signals. These distress signals were answered by the State Police on the west bank of the river.
54. On the night of 31 DECEMBER, at the time of the grounding of the SAUK, the air temperature was about 10° and the weather blustery with intermittent snow squalls. The wind velocity was between 25 and 30 MPH from a northerly direction. The ice condition of the river at this point was belts of pack ice, approximately 50 percent coverage.
55. During the attempt to launch the boat after the grounding, BILLE and CATANIA fell overboard but were promptly recovered, mostly by their own efforts.
56. At the time of grounding the current was ebbing.
57. The tidal range in the vicinity of the grounding was approximately 2 feet.
58. The fathometer of this vessel was inoperative, and had been since its installation. This was a matter of record in correspondence with the District Office.

RED STAR'S EXHIBIT 29

59. Steering was done by gyro compass. There had been no indication of gyro error.
60. There was no indication that the ice encountered en route caused any trouble in the steering of the vessel or any serious problems in making her way through the ice. The large cake ice caused some sheering of the bow but nothing that could not be easily rectified.
61. No unusual behavior of the vessel was noted prior to the stranding.
62. There is some confusion as to the exact time of grounding. The best estimate is 1845.
63. The window glass on the bridge is of a single pane type and subject to fogging and icing. This situation was partially corrected on 31 DECEMBER by placing two electric fans on the deck to blow air upward across the windows.
64. Due to the sharp list of the vessel after grounding no attempt was made to back off. The lube oil low pressure alarms indicated that the bearing were not receiving adequate oil, and that continued operation would seriously damage the engines, so they were stopped and not restarted.
65. To provide shipboard light and radio communications as long as possible, the port auxiliary generator was allowed to run from the time of grounding until it failed, a period of approximately 15 minutes.
66. After the generator stopped the only lights available to the personnel of the ship were battle lanterns and flashlights. There is no emergency lighting circuit on this vessel, nor emergency power for radio communications.
67. The Commanding Officer, SAUK allayed the fears of the crew by stating that the vessel was in no immediate danger of sinking.
68. The deck fittings for ventilation below the main deck are open to the atmosphere through natural ventilators terminating slightly above the main deck. The vessel's personnel had made temporary plywood closures to reduce the volume of cold air entering the engineroom in the winter time.
69. Doors on the main deck house were weathertight but not watertight.
70. There was indication of some flooding in the CPO's stateroom and the CO's stateroom through the weathertight doors on the after end of the deck house.
71. A second class can buoy had replaced a lighted buoy in position of LOWER HUDSON RIVER BUOY number 21, a change noted in Local Notice to Mariners Number 59 issued by CCGD3, 29 NOVEMBER 1962.
72. Chief Quartermaster, CARR, had ascertained, from the OAK, which lighted buoys had been removed from the river and been replaced by unlighted buoys, and which unlighted buoys had been removed completely. The lighted buoys replaced had been indicated on the chart by a penciled circle. A list of the unlighted buoys removed had been posted under glass on the chart desk.

RED STAR'S EXHIBIT 29

73. At approximately 2045 the NEW YORK STATE POLICE informed the personnel of the SAUK by loud hailer that a tug would be sent up from the MARITIME RESERVE FLEET, south of JONES POINT.

74. There was no indication of hysteria or fear, or any abnormal behavior of the crew following the grounding and subsequent abandonment of the SAUK.

75. Upon being notified of the SAUK's grounding, the GROUP COMMANDER, NEW YORK alerted the state and local police in the BEAR MOUNTAIN area, and the MARITIME SERVICE at JONES POINT, which in turn sent a tug to assist. An order was sent for the MANITOU in NEW YORK and the FIREBUSH at BASE St. GEORGE to proceed and assist the SAUK.

76. The CO, FIREBUSH reported later that he visually sighted buoys at approximately 50 yards in the darkness while proceeding to assist the SAUK.

77. The basic duties of the MANITOU were later changed to icebreaking on the HUDSON RIVER, and to be available for assistance, if required.

78. Shortly after 2100, the tug TD14, from the MARITIME COMMISSION RESERVE FLEET, JONES POINT, arrived on the scene, and removed the crew of the SAUK. A small launch had been sent first but was unable to proceed through the ice and had returned to her mooring.

79. The CO personally checked to see that all hands were off, that the hatches and doors were all fully secured, and that the ship was as secure as possible before his departure.

80. The crew of the SAUK was taken to the National Maritime Administration, Moorings, Hudson River Reserve Fleet, Tompkins Cove, New York where the CO talked with GROUP COMMANDER, NEW YORK by telephone.

81. The CO and four members of the crew remained at WEST POINT to join the FIREBUSH upon her arrival to assist in the salvage of the SAUK. The Military Academy at WEST POINT provided bus transportation for the remainder of the crew to return to NEW YORK.

82. After the arrival of the FIREBUSH at WEST POINT, about 0200, 1 JANUARY 1963, the CO and members of the SAUK crew were transferred to the FIREBUSH.

83. On 31 DECEMBER 1962, the Chief of the Engineering Division, CCGD3 and the Chief of the Naval Engineering Branch were on leave, and Mr. Thomas GRASSON, Supervisory Marine Engineer, was acting Chief of the Naval Engineering Branch. LCDR LOBKOVICH was the senior military officer present for duty in the Naval Engineering Branch of the Engineering Division of CCGD3.

84. Upon being notified at 2330, 31 DECEMBER 1962, LCDR LOBKOVICH arranged for himself, Mr. GRASSON, and Mr. Morris RUBIN, Marine Engineer attached to CCGD3, to be transported by automobile to WEST POINT, N.Y. and by the FIREBUSH from WEST POINT, at first light, 1 JANUARY 1963, to inspect the SAUK.

85. At approximately 0700, 1 JANUARY, the CG District Engineers and the CO, SAUK proceeded to the SAUK via the FIREBUSH, to determine salvageability of the SAUK.

RED STAR'S EXHIBIT 29

86. This inspection disclosed that most of the ^{engine room, ~~motor~~ room, the lazarette, ^{and}} the CPO's and the CO's quarters were flooded. The passenger space and the crew's berthing space were partially flooded. The ship had a port list of about 50°, and the stern was submerged at all stages of tide.
87. After the survey by this party, it was determined that only commercial salvage was feasible as the Coast Guard did not have the necessary facilities and equipment.
88. From this inspection it was determined that the SAUK was apparently hard aground on a rock under the keel at about frame number 27, starboard side, and was apparently in no danger of sliding off, unless forced excessively by raft ice in the river. On WEDNESDAY, 2 JANUARY, the FIREBUSH's crew salvaged office equipment, navigational instruments, ^{logs} ~~plus~~ logs, and miscellaneous articles from the vessel. They were returned to GROUP NEW YORK via Coast Guard vehicle.
89. The District Engineering Office on the morning of 2 JANUARY arranged for the salvage of the SAUK by MERRITT, CHAPMAN and SCOTT CORPORATION.
90. This salvage operation was accomplished under an annual Navy contract on a per diem basis, as administered by CAPT DUCHIN, USN, BUSHIPS Representative.
91. On 2 JANUARY, the salvage tug CURB, with the salvage master, CAPT ZICKEL^{me}, was dispatched to the scene from Staten Island, New York.
92. The CG-64311 from GROUP NEW YORK was ordered to proceed and assist as practicable.
93. The SAUK's wooden small boat was crushed and destroyed by the rafting ice before the FIREBUSH could free it.
94. The SAUK's boat handling gear did not provide for lowering by hand when there was no power on the ship.
95. CAPT CHAFFEE, District Chief, Engineering Division, proceeded on 2 JANUARY to the scene, and shortly after 1600 held a conference on board the FIREBUSH with the salvage master of MERRITT, CHAPMAN and SCOTT CORPORATION and the personnel from the SAUK and FIREBUSH, to consider the best means of salvage. It was determined that, instead of trying to seal off openings and de-water the vessel, a derrick barge of suitable capacity should be ordered to the scene.
96. The derrick barge, MONARCH, in tow of two MC ALLISTER tugs, proceeded on 3 JANUARY to the scene from NEW YORK, N.Y.
97. The FIREBUSH proceeded down the river to intercept and escort the derrick barge MONARCH under tow of the MC ALLISTER tugs. She delivered the derrick barge to the scene at 1000 on 4 JANUARY 1963.
98. The salvage operations consisted of placing bow and stern anchors out from the SAUK to hold her in position while the MONARCH put slings under the stern to lift the vessel and facilitate de-watering by pumps.

RED STAR'S EXHIBIT 29

99. The salvage operations continued in a satisfactory manner, and on the evening of 5 JANUARY, SATURDAY, the MONARCH had the slings in place, lifted the stern and de-watered the SAUK. On SUNDAY morning, 6 JANUARY, at approximately 0850, the SAUK was pulled free.
100. As soon as the stern had been lifted on 5 JANUARY, personnel from the FIREBUSH under CHMACH G. C. HICKMAN and CHMACH S. STOKICH, worked all night in draining machinery, filling with oil, washing with fresh water, and spraying with preservative.
101. After being freed by MERRITT, CHAPMAN and SCOTT, the SAUK was released at 1110 on 6 JANUARY to the CO of the FIREBUSH who in turn had the SAUK moored alongside the FIREBUSH.
102. Prior to the freeing of the SAUK, arrangements had been made for the cleaning and preservation of the electrical equipment and machinery aboard the SAUK by District Engineering Office, having ordered a supply of CRC, a preservative compound, delivered to the FIREBUSH at WEST POINT.
103. Being in readiness when the SAUK was brought alongside the FIREBUSH, immediate provisions for temporary lighting and fresh water were made available to the SAUK. The cleaning and preservation continued with no lost time.
104. From this time, during the passage down the river, and for approximately an hour after mooring at BASE, St. George, cleaning and preservative measures were continued in the machinery spaces of the SAUK.
105. The FIREBUSH, with the SAUK alongside, moored at BASE St. George at approximately 1700 SUNDAY, 6 JANUARY. About one hour later the TUCKAHOE moved the SAUK from the FIREBUSH's berth to a berth in the inner basin.
106. Upon arrival at the inner basin additional personnel from GROUP NEW YORK were made available to continue preservation of the ship's machinery.
107. The BASE St. George provided temporary lighting and heat.
108. The ship's force, assisted by the BASE, were utilized in cleaning up and salvaging as much material from the SAUK as possible.
109. From the time of grounding of the SAUK until after the salvage completion the keeper of the STONY POINT LIGHT STATION provided continuous radio and telephone communications. It is a well-known fact that in this area of the HUDSON RIVER radio reception and propagation on CG frequencies are very poor due to "dead spots" and limited facilities.
110. A HUDSON RIVER familiarization trip had been scheduled for the SAUK to begin on 2 JANUARY 1963, having been requested by the Commanding Officer about a week before CHRISTMAS, 1962.
111. The District and Group Commander's OPPLAN indicate icebreaking shall not be carried on during the hours of darkness excepting under emergency conditions.

RED STAR'S EXHIBIT 29

112. The CO of the SAUK stated that he did not believe that, if he met solid ice en route upriver and was required to break through it; that this would be considered breaking ice under the provisions of CCGD3 OPLAN ANNEX. He believed that this directive was applicable only when he was assisting in breaking out vessels and that the provisions of this plan would not apply until he arrived in the vicinity of the new bridge construction at NEWBURGH where the vessels were in trouble.
113. There is no indication of any equipment failures other than the temporary failure of the radar and the fact that the fathometer was inoperable.
114. The water in the area of the grounding tasted fresh. This was further confirmed by a check with the WEST POINT Power Plant that the salt content in the river water at WEST POINT was only three parts per million.
115. After the grounding several men of the SAUK's crew complained of colds and one was hospitalized for observation, but was released the next day.
116. SENEY, EN1, who aided the salvage master and the District Engineer with detailed information on compartmentation etc., of the SAUK, suffered a loss of memory and was subsequently hospitalized for a period of approximately 5 days. His memory has returned excepting for the actual period between the grounding and his subsequent entry into the USPHS Hospital on Staten Island.
117. The CO was Custodian of Classified Material of the SAUK.
118. The registered publications and the classified material were recovered from the CO's locked safe by SCUBA Divers from COTP NEW YORK and the WESTWIND. The divers were instructed by the CO as to the combination and, upon opening the safe, handed the material directly to the CO, who observed the entire operation through a porthole.
119. The classified material so removed was placed in a canvas bag, secured and delivered to the Commander, Third CG District. This was checked and the material fully accounted for.
120. The preliminary estimated cost to repair the SAUK by the CG YARD was \$300,000. A rough estimate of repairs by one local ship yard was \$178,000 and by a second \$192,000. *nee*
121. The estimated cost of personal property lost is \$5,300.
122. The estimated cost of outfit for the vessel lost requiring replacement is \$2,000.
123. The normal duration of a HUDSON RIVER ice ^{ice} breaking assignment is two weeks.
124. The following directives were in effect covering the icebreaking operations assigned the SAUK:

- a. DISTRICT OPLAN 1-62, ANNEX U, and appendices.

RED STAR'S EXHIBIT 29

b. GRUCOM NEW YORK OPLAN 1-62, undated, ANNEX U, and appendices.

c. The AtoN Manual section on icebreaking duties referred to by the above OPLANS.

125. Characteristics of the SAUK are: length 110 feet; beam 27 feet; draft 11 feet; normal displacement 370 tons; shaft horsepower 1,000; speed 12 knots; built in 1943, diesel-electric drive with 2 main engine-generators.

126. The principal duties of the SAUK were customs boarding, search and rescue, port security assignments, small boat boarding in NEW YORK HARBOR and icebreaking assignments within the Third CG District.

OPINIONS

1. That extended operations by the SAUK on 30 and 31 DECEMBER 1962 due to the state of the weather, with gusty northwest gales and temperatures in the low teens and below, requiring much SAR activity, resulted in fatigue of the responsible personnel.
2. That the GROUP COMMANDER, NEW YORK felt that the situation on MONDAY, 31 DECEMBER was serious enough for the vessels that were icebound in the HUDSON RIVER near NEWBURGH, N. Y., to immediately direct the SAUK to proceed and free them at the earliest practical time. In addition to this action, he requested the District Commander to assign the FIREBUSH to his OP CON for icebreaking duties.
3. The CO, XO, and QMC totally lacked experience in river navigation and ice-breaking in the HUDSON RIVER.
4. The lack of familiarity with the river and the adverse weather made this trip up the HUDSON RIVER a very trying experience for the CO, the XO and the Operations Officer.
5. The course lines on Exhibit 1 indicate that the QMC did not realize the vagaries of river currents or the hazards that might be encountered particularly with most of the lighted aids removed for the winter.
6. A danger bearing could have been plotted on the chart from LIGHT 23 to avoid the rocky shoal normally marked by buoy 21.
7. Normal operation of the SAUK in NEW YORK HARBOR does not require a strict bridge routine as on larger vessels. The CO usually stood the wheel watch and had the CONN.
8. The can buoy which had replaced lighted buoy number 21 marking the shoal was covered with ice and low in the water, making it very hard to see.
9. Prior to the abandonment of the SAUK and during the period of waiting for the tug to remove personnel, most of the movement had been completed, and her angle of heel had reached a maximum. The only danger being considered was the possibility of rafting ice forcing her from the shoal.

RED STAR'S EXHIBIT 29

10. After the grounding, as the ship shifted and listed more to port from its initial list, progressive flooding took place through the natural ventilation system in all spaces below river level.
11. In addition to the assistance given by the Maritime Service and New York State Police, cooperation was obtained from the Military Academy at WEST POINT, specifically on the night of the grounding by providing bus transportation for part of the crew to return to New York.
12. There was some question at the various times after the grounding as to who was responsible on the scene for the actual progress of operations. Upon the arrival of the CURB responsibility for salvage operations rested with the salvage master of MERRITT, CHAPMAN and SCOTT until the delivery of the SAUK to the FIREBUSH.
13. There seemed to be no permanent injury to the crew, although several men complained of colds, and one was hospitalized over night for observation. The only serious case was SENEY who suffered from amnesia, but was released after five days in the hospital.
14. The SAUK's message 311905Z indicated an error in the ETA at NEWBURGH. The proper ETA should have been 010110 (JAN 1963).
15. In retrospect, the advisability of assigning a fatigued, inexperienced crew on a mission that would entail at least 12 hours en route time to break ice for approximately 6 hours is highly questionable, and appears to be an uneconomical employment of forces.
16. The Commander, Third CG District's ice report for the river between STONY POINT and ESOPUS MEADOWS, in the area of grounding, revealed little or no factual information as to ice conditions to be anticipated en route NEWBURGH.
17. Probably the last rough log entry was made at either 1735 or 1805 on the day of the stranding. Entries in the rough log were not being made concurrently with the occurrence of the events. Some information was being noted on scrap paper for future log entries; other information was recorded from memory.
18. The installed natural ventilation system seriously impaired the watertight integrity of the SAUK above the maindeck.
19. There is no emergency power for lighting and communications aboard the SAUK.
20. The failure to fix and chart the vessel's position at any time en route up the HUDSON RIVER did not meet requirements demanded for proper navigation.
21. Appendix II to ANNEX UNIFORM of CCGD3 OPPLAN No. 1 FY may be ambiguous and subject to a variety of interpretations. It is believed that the SAUK was being operated on an icebreaking mission and probably should have limited its operation to daylight hours and good visibility.
22. The tendency of bridge windows to fog and ice up during severe winter weather seriously impaired visibility through the wheelhouse windows.

RED STAR'S EXHIBIT 29

23. The FIREBUSH performed in a praiseworthy manner in proceeding to assist the SAUK, before and during the salvage operations, and in preservation of machinery and equipment after de-watering; this should be recognized.
24. The crew of the CG-64311 performed in a praiseworthy manner during the salvage operations of the SAUK.
25. Machinists HICKMAN and STOKICH performed admirably during salvage and recovery operations.
26. The SCUBA divers did an excellent job in recovery of classified publications and assisting during salvage operations.
27. The crew of the SAUK reacted to the emergency in a highly creditable manner.
28. The preservation and cleaning of electrical equipment and machinery aboard the SAUK were accomplished to the maximum extent practicable by the ship's force, the FIREBUSH crew, New York Group personnel and BASE St. George personnel.
29. There was no compromise of classified material.
30. At the time of grounding the SAUK was cruising at or near her maximum sustained speed of 12 knots.
31. The CO, SAUK should have checked the plotted tracks laid down by the QMC.
32. The lost and unreclaimable stores and equipment have been surveyed.
33. That all personal losses suffered by the SAUK personnel in the stranding be reimbursed by the Coast Guard in accordance with existing directives.
34. The SAUK's bridge is not properly equipped for navigation on trips of this type, due to the lack of operable sounding equipment and wing peloruses for taking visual bearings.
35. The decision to abandon ship was reasonable, as neither heat nor light were available and the SAUK was believed to be in a precarious position.
36. Salvage was undertaken by the best method available and was accomplished without mishap.
37. The GRUCOM NEW YORK had not clearly instructed the CO, SAUK concerning operations in the ice at night. As a result the CO believed he was only following orders by proceeding through ice in darkness to the area where he had been ordered to assist other vessels.
38. Poor piloting practices and relaxed seamanship standards, developed over a period of time in routine local operations in NEW YORK HARBOR, resulted in the lowering of the performance of the SAUK's personnel below the standards required for operation in confined waters.
39. Shortly before the grounding the SAUK was unexpectedly set to the westward by one or more of the following:

RED STAR'S EXHIBIT 29

- a. Overrunning the turning point to the new course of 031° at Bear Mt. Bridge.
- b. Ebbing current.
- c. Set due to wind.
- d. Deflection by ice.
- e. Mistaken interpretation of shoreline return on radar.

40. The grounding resulted from the combination of an unexpected set to the westward and failure to detect this set by proper utilization of available navigational equipment and aids.

41. The CO, SAUK performed his duties in a very effective and efficient manner during the salvage operations and during the reclamation and preservation stages.

42. There is an indication of an offense under Articles 92, 108 and 110 UCMJ.

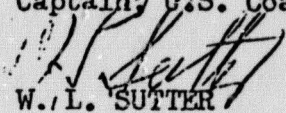
RECOMMENDATIONS

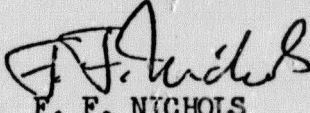
1. That the SAUK class ventilation system be modified so that it can be made watertight.
2. That all vessels having icebreaking capabilities have an emergency generator system to provide power to emergency lighting and communication circuits.
3. That the SAUK's fathometer be replaced with one of proven reliability.
4. That prior to 1 DECEMBER each year, all CO's and OinC's of icebreaking units be given indoctrination lectures and familiarization trips in areas where they may be assigned to operate.
5. That SHIPALT #110A-X-124 be accomplished on the SAUK by installing thermopane windows.
6. That the Coast Guard continue its SCUBA diver training program to provide divers for salvage operations and other underwater tasks.
7. That consideration be given to installing a red sector on Lower Hudson River Light 23, LL 1565 to cover this danger area.
8. That ANNEX U to CCGD3 OPPLAN 1-62 be redrafted to remove ambiguity. Clarification is needed to define when a vessel is or is not engaged in an icebreaking operation.
9. That the bridge arrangement of icebreaking tugs be studied with a view to improving the capability for taking visual bearings.
10. That efforts be made to assign more experienced senior petty officers to small icebreaking vessels.

RED STAR'S EXHIBIT 29

11. That the possibility of installing more efficient radars on SAUK class tugs be studied.
12. That the boat handling equipment of this class of tugs be modified to permit lowering without power.
13. That a program of operational training and inspection be initiated by group commanders to improve the operational efficiency of floating units.
14. That disciplinary action be taken against CHBOSN P. R. CORNELL (27446) CO, CGC SAUK, under the appropriate provisions of the UCMJ.
15. That a letter of commendation or appreciation be written to the following:
 - a. John J. KERR - Keeper of STONY POINT LIGHT
 - b. CGC FIREBUSH
 - c. CG-64311
 - d. CHMACH HICKMAN
 - e. CHMACH STOKICH
 - f. NEW YORK STATE POLICE
 - g. U. S. MILITARY ACADEMY, WEST POINT
 - h. National Maritime Administration, HUDSON RIVER Reserve Fleet, Tompkins Cove, New York.


H. R. CHAFFEE
Captain, U.S. Coast Guard, President


W. L. SUTTER
Captain, U.S. Coast Guard, Member


F. F. NICHOLS
Captain, U.S. Coast Guard, Member

RED STAR'S EXHIBIT 33.

From: Commander, Third Coast Guard District
To: U. S. Army Engineer District, New York
Corps of Engineers
111 E. 16th Street
NY, NY

Atc

Subj: Rock Removal, Lower Hudson River

1. It is requested that an investigation be made to determine the feasibility of removing, to 35 feet below mean low water, the rock in the Hudson River on the west side of the channel three miles below West Point, New York. This rock is marked by Lower Hudson River Lighted Buoy 21 from 1 April to 1 December and by an unlighted buoy during the winter months.
2. A number of vessels have been extensively damaged by ~~striking~~ striking this rock. The Coast Guard Cutter ~~SAUK~~ suffered damage amounting to \$300,000 when it struck the rock on the night of 31 December 1962, while maneuvering in ice. In January 1935 the Coast Guard Cutter COMANCHE also was extensively damaged when it struck the rock. Records in this office indicate that three commercial tugs hit this rock and sank between 1920 and 1930; and four barges in the tow of the tug JUMBO during a period of low visibility struck the rock on 2 April 1952 and suffered considerable damage.

Donath
atc
SAUK



OFU
H3
Ser: 314
APR 26 1963

Ref: (a) CGGD3(o) ltr H3 of 18 March 1963

1. Reference (a) requested cost information on damage to Coast Guard vessels as a result of groundings on Con Hook Rock in the Hudson River.
2. Enclosure (1) is an extract from a Board of Investigation concerning the grounding of the COMANCHE (WPG-76) on Con Hook Rock during icebreaking operations at 0250 19 Jan 1935. Costs were not indicated and are not available. Records failed to indicate evidence of other groundings by Coast Guard vessels on this particular rock from 1935 to present.

R. J. CARSON
By direction

Encl: (1) Extract from Board of Investigation
on COMANCHE grounding 19 Jan 1935.

- ☐ Hydro.
- ☐ Buoy Cards
- ☐ Cost Rec.
- ☐ Steno..
- ☒ 3 Files
- ☐ Messenger
- ☐ Operations

RED STAR'S EXHIBIT 33

*Comanche (WPG 76) grounded on Con Hock Rock Hudson River
2:50 AM 19 Jan 1935*

Fact 12. That the COMANCHE sustained the following damage as a result of the grounding:

a. Keel plates bent from frames 12 to 38 and dented to a depth of about 2 inches between frames 18 and 19; dented to a depth of about 1-1/2 inches between frames 29 and 30 and slightly dented on the port side just forward of frame 62.

b. That the A strake on the port side is badly bent between frames 14 and 32, being concave to a depth of about 12 inches in the vicinity of frame 28 and reuptured between frames 24 and 25 with a crack of about 3/4 inch wide.

c. That the B strake on the port side is bent from frames 15 to 30.

d. That the floors and frames are bent from frames 15 to 37, being badly bent between frames 18 and 30.

e. That the vertical keel is bent between frames 35 and 37.

f. That the water-tight bulkheads at frames 12 and 19 are buckled and bent, particularly at the base of each.

g. That the oil tank bulkheads at frame 30 is buckled and leading and the oil tank bulkhead at frame 37 is slightly buckled.

h. That the berth deck plating is slightly buckled with about 1/2 inch of buckle in the vicinity of frames 24 and 25.

i. That the mess deck plating is slightly buckled in the vicinity of frame 28 and the amidship stanchion at that frame is slightly bent.

j. That the starboard bilge keel is bent in the vicinity of frames 39 to 42.

Opinion 6. That to repair the damage done to the COMANCHE, will necessitate the following:

KEEL PLATES: Remove, fair and replace 3 keel plates from frames 11-1/2 to 39-1/2

A STRAKE PLATES. Cut out and renew 2 strake plates 13-1/2 to 33-1/2 frames.

B STRAKE PLATES: Remove, fair and replace 2 B strake plates from frames 13-1/2 to 33-1/2.

FLOORS & FRAMES: Remove, straighten or renew, 25 floors and frames. About 40% renewal.

VERTICAL KEEL: Renew from frames 25 to 37.

BULKHEAD: Cut out damaged sections at frames 30 and 37, insert pieces secured with butt straps.

WATER-TIGHT BULKHEADS: At frames 12 and 19 cut out damaged sections and insert pieces secured with butt straps.

BERTH DECK PLATES: Straighten in place.

BILGE KEEL (Starboard side): Cut at frame 39-1/2 and renew after end; weld at joint.

RED STAR'S EXHIBIT 33

OFU
H3
Ser: 314

APR 26 1963

From: Commandant
To: Commander, Third Coast Guard District (o)

Subj: Reports of Grounding

Ref: (a) CCGD3(o) ltr H3 of 18 March 1963

1. Reference (a) requested cost information on damage to Coast Guard vessels as a result of groundings on Con Hook Rock in the Hudson River.

2. Enclosure (1) is an extract from a Board of Investigation concerning the grounding of the COMANCHE (WPG-76) on Con Hook Rock during icebreaking operations at 0250 19 Jan 1935. Costs were not indicated and are not available. Records failed to indicate evidence of other groundings by Coast Guard vessels on this particular rock from 1935 to present.

R. J. CARSON
By direction

Encl: (1) Extract from Board of Investigation
on COMANCHE grounding 19 Jan 1935.

RED STAR'S EXHIBIT 33

\$ 300,000 31 Dec 1962 Sunk but
 \$ 50,000 Concrete
 Lower Indian River Lk By 21
 Lower Rk 5 - 35'
 3 mi below Vero Pt West side Chaul 282

Annual cost of fuel \$500
 Cost structure \$17,000
 Channel width 500 yds

RED STAR'S EXHIBIT 33

/C Krueger etc
 Mohawk - grounded in 1943-44
 during ice period.
 Taken off by CG Tenders & ^{Tug} Manhattan
 This happened during war time and
 investigation ^{was} not have been held.
 Capt. O. Souty ~~was not~~ ^{has no record of}

Some scuttlebut that the
 Steam Tug Mohawk or Manhattan
 grounded about 20 or 25 years
 ago at the same place.

Kafoder says the unlighted
 can buoy 21 is kept there in
 winter to replace Lower Hudson
River Ltd Buoy 21 to avoid
 grounding at Can Hook.

A. Horodur

3/14/63

RED STAR'S EXHIBIT 33

CASE NO. 010935

MERCHANT MARINE INVESTIGATING UNIT
THIRD COAST GUARD DISTRICT
NEW YORK 13, NEW YORK
29 April 1952

INVESTIGATING OFFICER: Manson E. Wookins, LT., USCG

APPEARANCE: Edward C. Kalaidjian, of Thacher, Proffitt, Prizer & Crawley, 72 Wall Street, New York 5, N.Y., representing Mr. John P. Cullen and the Cornell Steamboat Company, E. Strand, Kingston, N.Y. (New York Address Conell Steamboat Company, 712 Twelfth Avenue, New York 19, N.Y.)

REPORTER: Stephen Peckiconis, YN1, USCG

o o o o o o o o o o o

BY THE INVESTIGATING OFFICER:

This is an investigation conducted by an officer of the U. S. Coast Guard under authority of R.S. 4450, as amended and the regulations promulgated pursuant thereto. It is an investigation to inquire into the circumstances of a casualty which occurred on 2 April 1952, wherein it has been alleged that the diesel tug JUMBO while towing barges in the Hudson River struck a submerged object. Mr. Cullen as you were serving as master of the tug JUMBO at the time I will ask you certain questions regarding what you know of this incident.

J O H N P. C U L L E N, 3538 - 94th Street, Jackson Heights, New York, N.Y., having been first duly sworn, made the following statements:

BY THE INVESTIGATING OFFICER:

Q. What is your full name and address?

A. John P. Cullen, 3538 - 94th Street, Jackson Heights, New York, N.Y.

Q. Do you hold a license issued by the U. S. Coast Guard?

A. Yes, sir.

INVESTIGATING OFFICER: The witness produces license No. 34827, issue 5,6, issued to John P. Cullen, to serve as master of freight and/of tug, steam and motor vessels, five hundred gross tons. First class pilot any steam and/or motor vessels, five hundred gross tons, Hudson River, between Battery and Troy, New York; first class pilot any steam and motor vessels, 750 gross tons, on New York Harbor above the Narrows, East River to North Brother Island, Staten Island Sound from Robbins Reef to Elizabethport, New Jersey. License returned to witness.

Q. Were you serving as master of the tug JUMBO on 2 April 1952?

A. Yes, sir.

Q. Is that vessel diesel or steam?

A. Diesel.

Q. What is the gross tonnage?

A. Around 217.

RED STAR'S EXHIBIT 33

Q. Was it necessary that you hold a license before being employed as master of this tug, if you know?

A. Yes, the company required license men.

Q. Did the vessel on 2 April 1952 and its tow strike a submerged object?

A. Yes, sir.

Q. Will you describe the circumstances that existed just prior to, at the time of, and following the casualty?

A. Well just prior, it was fog and rain and after and during the accident it was the same condition.

Q. Where had the vessel departed and where were you bound?

A. We left Clinton Point.

Q. Where is that?

A. Half way between Foughkopsie and Newburgh.

Q. On what date?

A. April 1st bound for New York City. We had a tow of seven (7) loaded boats and one (1) light boat. They were being towed astern of us on a hawser 75 feet long. Four on the starboard tier and three on the port astern and the light boat was spiked on the portside of the tow along the other three boats. Four long on the starboardside, three long on the port and a light boat alongside the port scows.

Q. What time did you strike the object?

A. It was around 12:10 or 12:15 a.m.

12:00(?)

Q. Will you refer to chart U.S.C. & G.S. No. 282 and indicate to the best of your ability the position where the grounding or the casualty occurred?

A. I think it was around here (indicating a position approximately three hundred yards northeastward of the flashing green No. 5 buoy off Con Hook, New York).

Q. At the time were any lights visible in the vicinity?

A. Just before the accident I saw the light on the Island which is a white flash (indicating Con Hook).

Q. What was the characteristic of the light you saw?

A. A white flash because I couldn't see clearly, all I could see was a blur as we passed by. It was the only white flash in the vicinity and I was certain it was Con Island. Over here is a little signal tower, I think that this would be it about here (indicating across the river to the northeastward of the Con Hook) That was on the portside coming down. I saw a dim light as we passed by for a second.

Q. Did you at any time prior to the incident see the flashing green light on the buoy No. 5?

A. No, sir.

Q. Did you at any time after the incident see the flashing green No. 5?

A. No, sir.

Q. Do you know if that buoy is on station?

A. I don't think it was on station then.

RED STAR'S EXHIBIT 33

Q. ^{any} Do you know whether any buoy or light is there?
 A. There is a can buoy there, that is always there.

Q. You don't know if it has a light on it?
 A. The can buoy don't have a light on it, the green buoy is the only one that has a light on it. The can buoy don't have a light on it.

Q. ^{What} Was was the approximate distance of visibility at the time of striking the object?

A. At the time of striking the object I couldn't see most hardly anything at all. The fog had closed in on the bank. The fog started at West Point.

Q. What was your speed at the time of the incident?

A. Well we might have been making probably five miles per hour.

Q. Tide ebbing or flooding?

A. Ebb tide.

Q. When you passed Con Hook were both sides of the river visible?

A. When we passed the Island I could see the both sides, I saw the little signal tower on the railroad but when we passed the Island, we couldn't see this (indicating the east shore) both sides were visible when we passed the signal tower that is above the upper end of the Hook.

Q. Do you think that it was possible that you struck the shoal where the buoy is located?

A. Well I don't know.

Q. Where there is (indicating a depth of seven (7) feet)?

A. I don't think so, for the simple reason I was blowing fog signals passing Con Hook and we mostly depend on the echo of the whistle through the highlands and as I was passing it I was getting the echo from both the Island and the shore at the same time which meant that we were in the middle of the channel after we passed the Island (indicating the west shore). The echo from this shore took long to come back (indicating the east side of the river) and later I got the echo down in here (indicating the point of land to the southeastward of the flashing green No. 5 buoy) and then from my previous experience from the different times that I tried the whistle out at night when there was no fog when I got that echo (indicating a point to the south southeastward of Mystery Point. When I got the echo from this Mystery Point I also found myself clear of the reef. The course we steered coming down Con Island we were steering south which we always steer,

Coming down Con Hook Island
 Q. Who was at the wheel?

A. I was.

Q. Were you steering by standard compass?

A. Yes, sir.

Q. What was the deviation of this compass on a southerly heading?

A. I couldn't answer that for I don't know.

Q. What do you have to steer to steer south?

A. South on the compass.

RED STAR'S EXHIBIT 33

170

Q. You mean ~~20~~ degrees?

A. Yes, see we don't steer by degrees there. South quarter, south half.

Q. What was the variation for the locality?

A. I couldn't tell you that either.

Q. Can you refer to the chart and tell me?

A. No, sir, I couldn't.

Q. How long have you been operating in this vicinity?

A. Well I have been going up and down the river ever since I held my license, since 1937, then deck hand before that for 4 or 5 years.

Q. What damage resulted?

A. Well I am not sure of that. All except the four of the scows that were on that starboard side of the scows they received bottom damage, to what extent I don't know but the scows on the port side, port tier wasn't damaged at all. The witness stated that I believe that the damage has been estimated to exceed 18,000 dollars, but I have not personally inspected or seen the damage myself.

Q. Were there any personnel injured, if you know?

A. No, sir, I haven't heard of any.

Q. Did any of the barges sink?

A. No, sir.

Q. Were you able to proceed on your way down the river?

A. Yes, sir.

Q. What is the draft of your tug?

A. ~~It~~ It is about 13-8 feet aft and ten forward.

Q. What is the draft of the barges, the deepest one?

A. The deepest barge runs about 9 feet or ten feet.

Q. Did you make any log entry as to when you passed Con Hook Light abeam?

A. I didn't make any entry except that it was about midnight. I think it was just a few minutes after midnight. I didn't make any entry. I know that we always make an entry at midnight and I think that we were a few feet above that at 12 o'clock.

Q. What was the next light you recall seeing after the incident?

A. The next light we saw was when we were down here at Anthony's Nose.

Q. Do you remember making any change in course after passing Con Hook Light?

A. Yes, after we got down here to the light I changed the course to south three-quarters west.

Q. Did you ever use that waterway between the buoy No. 5 and the west shore?

A. I myself have never been in charge when it was used but I have seen it used, but I never did, but I have been on it when it was used.

RED STAR'S EXHIBIT 33

Q. Do you think that if that flashing green buoy would have been there you would have seen it?

A. It is possible that I might have but due to the conditions of the fog then, I might have missed it.

Q. Were there any other crew members up and around at the time?

A. The deck hand on watch was up in the bow.

Q. Did he report anything?

A. Yes, he reported that he saw this little can buoy that marks the reef.

Q. What did he say?

A. There is a buoy off the starboardside.

Q. That indicates that you were very close to that shoal in view of the conditions of visibility which you previously described as existing at the time of the incident?

A. Well as you come across that was after the accident that we saw the buoy, after we hit this object whatever it was we come across to clear Kystery Pt.. I changed the course when he said that he saw the buoy after I struck this object there was times when the fog would be thick and then you could see along the water. It wasn't a steady fog, it came and went, later on in the morning I had to stop and tie up.

Q. Approximately how much time elapsed between the time of striking the object and the time the crew member reported the buoy?

A. I don't think that was over two or three minutes, not more then five anyway.

Q. Did you see the buoy?

A. I couldn't swear that I saw it, I looked when he told me. I saw it and as we were going by and with ebb tide, I saw something that looked like a buoy.

Q. You saw an object?

A. Yes, I saw an object.

Q. Is there anything further that you would like to state at this time that maybe of material to the investigation?

A. Well I don't know, except that I steered the same course that night as I have for years in daylight and dark, in clear and bad weather.

Q. Do you know of any wrecks which have existed in the vicinity?

A. Yes, I do. I know two of Cornell's tugs. This happened a long time ago. It must have been in the early '20's. The tug HERCULES and the tug EDWIN TERRY, they both hit the reef and both sank. Then later on in the later '20's, one of Russell's tugs come down with an oil barge, they hit the reef and they sank, that's all I know of. Two of the tugs were removed but I don't think that the Russell tug was ever removed or raised. The two Cornell tugs were removed.

Q. What was the condition of the tide at the time this happened, high tide, low tide?

A. Low water.

RED STAR'S EXHIBIT 33

Q. These barges that you damaged, were they steel barges or wooden barges?

A. Wooden barges, flat bottom.

Q. Prior to the incident had you experienced any difficulty with any parts of the vessel, such as the steering mechanism or engines?

A. No, sir.

Q. Captain do you think in view of the evidence in this case that you may have struck that reef where No. 5 buoy is?

A. No, I don't think so, sir, because in my opinion if we had struck the reef I don't think that we could have pulled the tows across it. I think that the tows would have been broken up.

INVESTIGATING OFFICER: A check was made with the Aids to Navigation Office and it was found that the flashing green buoy No. 5 was placed on station on 4 April 1952.

Q. When was the last time you passed this vicinity prior to the incident?

A. The previous morning I had passed the vicinity and had noticed the black can buoy there at the shoal ~~and~~ ^{at} Con Hook Reef.

Q. Had you considered anchoring in view of the condition of visibility?

A. The fog would shut down for a brief period and then clear up again and I was able to proceed, however, at 5 a.m. it did shut down and I pulled into Tomkins Cove and did anchor there.

WITNESS D I S M I S S E D

o o o o o o o o o o o

RED STAR'S EXHIBIT 33

To: District Engineer, Corps of Engineers, NY District
 From: CCGD3
 Subj: Rock Removal Lower Hudson River

1. It is requested that a project be initiated to remove to 35 feet below mean low water the rock in the Hudson River on the west side of the channel three miles below West Point, New York. This rock is marked by Lower Hudson River Lighted Buoy 21 from 1 April to 1 December and by an unlighted buoy during the winter months.

2. A number of vessels have been extensively damaged by striking this rock. ^{the most recent occurred when} ^{upland} The Coast Guard Cutter SAUK ^{on night} suffered damage amounting to \$300,000 when it struck the rock on the night of 31 December 1962 while maneuvering in ice. In past years ~~two~~ other Coast Guard cutters also were damaged when they struck. Total cost of repairs in these cases amounted to \$ _____.

L. G. HAVERLAND
 by direction

\$500 per year to maintain buoy.
 estimate damage
 #5 vessels →

Nothing

See Some Blocks

Suggest getting Coast Plot which indicates danger coming down below Con & Hook

wait for info from (OFU)

Add #5? & send out as soon as estimate of damage cost is received from HQ (OFU)

Add #5?

Figure below
 Con & Hook

SW-B' FILE

4-12

75

RED STAR'S EXHIBIT 33

G
H3
18 March 1963

From: Commander, Third Coast Guard District
To: Commandant (OPU)

Subj: Reports of Grounding

1. There is unofficial information that the Coast Guard Cutters Mahoning and the Comanche hit the rock immediately south of Con Hook in the Hudson River a number of years ago. It is requested that your office advise the cost of damage entailed if indicated in available records of these groundings. It is believed that they occurred some time in 1943 or 1944.
2. The reason for this request is to determine whether the removal of the rock, which is located in the Hudson River on the west side of the channel three miles below West Point, New York, can be economically justified.

P. J. SMENTON
By direction

mailed
3-19-63

for

for Capt. Hornum's personal
✓ 4/11

RED STAR'S EXHIBIT 33

Morris Canal

NEW JERSEY - NEW YORK - MORRIS CANAL - LOWER HUDSON RIVER - MORRIS CANAL WRECK LIGHTED BUOY WR2 HAS BEEN TEMPORARILY ESTABLISHED 465 YARDS 189° FROM EAST STACK, JERSEY CITY, IN 25 FEET OF WATER TO MARK WRECK OF RAILROAD CAR-FLOAT SUNK IN CHANNEL ON NORTH SIDE OF MORRIS CANAL BASIN. WRECK BUOY IS RED AND SHOWS A QUICK-FLASHING RED LIGHT OF 30 CANDLEPOWER 7 FEET ABOVE WATER AND IS LOCATED 10 FEET 189° FROM THE WRECK WHICH LIES IN A WEST-NORTHWEST AND EAST-SOUTHEAST DIRECTION.
 USC&GS CHART: 745 (MAINTAINED FOR LEHIGH VALLEY RR Co.) LIST OF LIGHTS No: 1540.5

NEW JERSEY AND NEW YORK - LOWER HUDSON RIVER - THE BARGE, THOMAS J. LANIGAN IS REPORTED SUNK 835 YARDS 284.5° FROM VENTILATOR, PIER 80, MANHATTAN, IN ABOUT 55 FEET OF WATER. WRECK WILL BE MARKED FOR THE CORPS OF ENGINEERS BY A LIGHTED BUOY SHOWING AN INTERRUPTED QUICK-FLASHING WHITE LIGHT OF 140 CANDLEPOWER 8 FEET ABOVE WATER. WRECK HAS 34 FEET OF WATER OVER IT AT MEAN LOW WATER.
 USC&GS CHART: 745

NEW YORK - HUDSON RIVER - DREDGING BUOYS A THROUGH H, PREVIOUSLY TEMPORARILY ESTABLISHED BY THE CORPS OF ENGINEERS, HAVE BEEN DISCONTINUED, DREDGING OPERATIONS HAVING BEEN COMPLETED.
 USC&GS CHART: 746 REF: LNM 53, 54, 56-62 LIST OF LIGHTS PAGE: 271

NEW YORK - HUDSON RIVER - THE 110-FOOT TUG BOAT, PREVIOUSLY REPORTED AGROUND APPROXIMATELY 700 YARDS 201° FROM LOWER HUDSON RIVER LIGHT 23 HAS BEEN REMOVED.
 USC&GS CHART: 282 *SAUK* REF: LNM 1 (1-3-63)

DELAWARE AND NEW JERSEY - DELAWARE RIVER - THE CORPS OF ENGINEERS, DEPT. OF THE ARMY ADVISES THAT DREDGING OPERATIONS ARE IN PROGRESS IN THE VICINITY OF REEDY ISLAND, NEWCASTLE RANGE AND ON CHERRY ISLAND RANGE. TEMPORARY LIGHTS OF LOW CANDLEPOWER HAVE BEEN PLACED ON CHERRY ISLAND RANGE BUOYS 3C AND 5C.
 USC&GS CHART: 294

NEW JERSEY AND PENNSYLVANIA - DELAWARE RIVER - THE FOLLOWING TEMPORARY CHANGES HAVE BEEN MADE PENDING ESTABLISHMENT OF PERMANENT LIGHTS:

- (A) BEVERLY RANGE FRONT LIGHT (LL No. 1992) RENAMED EDGEWATER LOWER RANGE FRONT LIGHT AND MOVED TO A NEW POSITION 485 YARDS 350° FROM SPIRE, BEVERLY. LIGHT IS 21 FEET ABOVE WATER AND SHOWS FLASHING WHITE EVERY 1 SECOND, 0.4 SECOND FLASH OF 3500 CANDLEPOWER ON RANGE LINE DIMINISHING TO 300 CANDLEPOWER AROUND REMAINDER OF THE HORIZON. THE DAYMARK, A BLACK DIAMOND ON A WHITE SQUARE, IS MOUNTED ON SKELETON PIPE TOWER.
- (B) BEVERLY RANGE REAR LIGHT (LL No. 1993) RENAMED EDGEWATER LOWER RANGE REAR LIGHT AND MOVED TO NEW POSITION 233 YARDS 249.5° FROM RELOCATED FRONT LIGHT. LIGHT IS 35 FEET ABOVE WATER AND SHOWS OCCULTING WHITE EVERY 3 SECONDS, 2 SECOND LIGHT OF 6,000 CANDLEPOWER VISIBLE ON RANGE LINE ONLY. THE DAYMARK, A BLACK DIAMOND ON A WHITE SQUARE MOUNTED ON SKELETON PIPE TOWER. FORMER BEVERLY RANGE FRONT AND REAR LIGHTS HAVE BEEN PERMANENTLY EXTINGUISHED.

USC&GS CHART: 296

REF: LNM 64 (12-27-62)

10 JANUARY 1963

(PAGE 4 OF 7)

NOTICE NO: 2

RED STAR'S EXHIBIT 33

L1117
 NEW YORK - NEW JERSEY NEW YORK HARBOR - THE INTENSIT F AMBROSE CHANNEL LIGHTED WHISTLE BUOY 9 HAS BEEN INCREASED FROM 400 TO 440 CANDLEPOWER.
 USC&GS CHARTS: 369, 1215 LIST OF LIGHTS No: 1298

NEW YORK - NEW YORK HARBOR - LOWER BAY - THE NARROWS SOUTHERLY PLATFORM LIGHT IS EXTINGUISHED. (PRIVATE AID MAINTAINED BY TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY.)
 USC&GS CHARTS: 540, 369 LIST OF LIGHTS No: 1309.5

re NEW YORK - HUDSON RIVER - *previously reported* A 110-FOOT TUG BOAT IS AGROUND AND LISTING APPROXIMATELY 700 YARDS 201° FROM LOWER HUDSON RIVER LIGHT 23. PASSING VESSELS ARE REQUESTED TO EXERCISE EXTREME CAUTION AND SLOW SPEED TO MINIMIZE ANY ADDITIONAL DAMAGE TO OR LOSS OF THIS VESSEL. USC&GS CHART: 282 *SAUK?*
~~LIST OF LIGHTS NO. 1565~~
has been removed p. 274

NEW YORK - HUDSON RIVER - THE NEW YORK CENTRAL RAILROAD ADVISES THEIR RAILROAD BRIDGE OVER THE HUDSON RIVER AT ALBANY WILL NOT BE OPENED FOR PASSAGE OF VESSELS UNTIL 1 APRIL 1963 UNLESS NOTICE IS GIVEN 24 HOURS IN ADVANCE OF THE TIME A VESSEL MAY BE EXPECTED TO PASS THROUGH. NOTICE CAN BE GIVEN BY CALLING ALBANY, NEW YORK, HO-56211.
 USC&GS CHART: 284

DREDGING OPERATIONS - THE CORPS OF ENGINEERS, DEPT. OF THE ARMY ADVISES THAT DRILLING, BLASTING AND DREDGING OPERATIONS ARE IN PROGRESS IN THE FOLLOWING AREAS:
 DELAWARE RIVER-

- ON CHERRY ISLAND RANGE FROM A POINT OPPOSITE BUOY 50 TO A POINT 1000 FEET ABOVE BUOY 30.
- REMOVING THE OLD PIPELINE TRESTLE EAST OF DEEPWATER POINT RANGE.
- IN THE LEHIGH-LANDRETH RANGE AREA OF THE CHANNEL BETWEEN BURLINGTON, NEW JERSEY AND THE TURNPIKE BRIDGE. DREDGE WILL HAVE FLOATING PIPELINE LEADING TO THE NEW JERSEY SHORE.
- ON TORRESDALE AND/OR MUD ISLAND RANGE OPPOSITE THE MOUTH OF RANCOCAS CREEK.
- DRILLING AND BLASTING LEDGE ROCK ON TORRESDALE RANGE OPPOSITE THE MOUTH OF RANCOCAS CREEK. DRILLBOAT WILL BE ANCHORED IN THE CHANNEL WORKING 24 HOURS PER DAY. MARINERS ARE CAUTIONED TO SLOW DOWN AND PROCEED WITH CARE IN THIS AREA. RADIO AND RADAR TRANSMITTERS SHOULD NOT BE USED IN VICINITY OF THIS PLANT.
- IN THE SHIP CHANNEL BETWEEN POINTS ONE MILE BELOW TO THREE MILES ABOVE THE TACONY-PALMYRA BRIDGE. DREDGE WILL HAVE A FLOATING PIPELINE LEADING TO THE NEW JERSEY SHORE.
- EAST OF AND ADJACENT TO MARCUS HOOK ANCHORAGE. THE DRILL RIG WILL BE WORKING 24 HOURS PER DAY.
- ADJACENT TO PENNSVILLE DIKE. DRILL RIG WILL BE WORKING 24 HOURS PER DAY.

RED STAR'S EXHIBIT 33

SPECIAL NOTICE REPRINTED FROM CGD5 LOCAL NOTICE TO MARINERS 68 DATED 12 DECEMBER 1962:
WHEN ICE CONDITIONS IN THE UPPER CHESAPEAKE BAY AND THE CHESAPEAKE AND DELAWARE CANAL
MAKES NAVIGATION DIFFICULT FOR LOW POWERED VESSELS THE COAST GUARD INTENDS TO FORM
SUCH VESSELS INTO CONVOYS TO FACILITATE THEIR PASSAGE THROUGH THESE WATERS UNDER ES-
CORT OF COAST GUARD VESSELS WITH ICE BREAKING CAPABILITIES. ONCE THE CONVOY SYSTEM
IS INAUGURATED VESSELS UNABLE TO NAVIGATE THROUGH THE ICE WITHOUT ICE BREAKER AS-
SISTANCE WILL BE REQUIRED TO WAIT FOR CONVOY SERVICE.
WESTBOUND CONVOYS WILL FORM IN THE DELAWARE RIVER OFF REEDY POINT AND WILL START
THROUGH THE CHESAPEAKE AND DELAWARE CANAL AT 8:00 AM, EST DAILY.
EASTBOUND CONVOYS WILL FORM IN THE VICINITY OF BREWERTON CHANNEL EASTERN EXTENSION
LIGHTED BELL BUOY A (LL 2528) AND WILL DEPART THAT POINT AT 10:00 AM EST DAILY.
IN THE EVENT THAT TWO ICE BREAKERS ARE REQUIRED FOR EACH CONVOY, IT WILL BECOME NEC-
CESSARY TO OPERATE ONE EASTBOUND AND ONE WESTBOUND CONVOY ON ALTERNATE DAYS. THE
CONVOY SYSTEM WILL NOT BE STARTED UNTIL ICE CONDITIONS MAKE IT NECESSARY. THE DATE
CONVOY OPERATIONS WILL COMMENCE WILL BE ANNOUNCED BY A NOTICE TO MARINERS. ANY CHAN-
GES IN SCHEDULES OR MODE OF OPERATION WILL ALSO BE THE SUBJECT OF A NOTICE TO
MARINERS.

DATE: 3 JANUARY 1963

(PAGE 2 OF 5)

NOTICE No. 1

NEW JERSEY
NEW YORK - HUDSON RIVER - ¹¹⁰ a tug Boat is

aground and listing in vicinity of LHR LP
700 yard 201 dm, from con Hook LT.

Passing and arising to use extra
center and slow speed to maneuver, any add.
downs to or loss of the vessel

Chart ~~283~~ 282

SAUK.

RED STAR'S EXHIBIT 34.

II. CONCLUSIONS AND RECOMMENDATIONS

This chapter summarizes the findings and conclusions reached in this second phase of the study, dealing with the feasibility of substituting minor marine structures for buoys as short-range aids to navigation. The first five findings derive from consideration of the technical and operational aspects of such a conversion; the last six from consideration of economic aspects. Recommendations based on the findings and conclusions are advanced in the final section of the chapter.

1. TECHNICAL AND OPERATIONAL CONSIDERATIONS

The following findings and conclusions are based on the analyses described in Chapter III.

- (1) Because Structures Are More Effective Aids to Mariners Than Buoys, Replacement Could Be On a Better-Than-One-to-One Basis.

Structures generally provide larger daymark areas than buoys and are higher above the water; hence, they are more readily visible. They also provide a more stable platform for the light signal. Further, established structures do not change position unless destroyed, and thus provide better location accuracy. For these reasons, in many locations a single structure could replace more than one buoy without any compromise to system effectiveness.

- (2) The Applicability of Structures Is Restricted by Considerations of Environment, Water Depth, and Bottom Conditions.

Ninety-four percent of the existing structures are established in protected or semiexposed environments. Deep water, unstable rivers, or severe ice conditions strictly limit the applicability of structures in other environments.

While structures can be established at greater depths, approximately 20 feet is the maximum practical depth that can be achieved without recourse to larger, more costly, and less mobile construction tenders.

Although structures can be established in essentially any stable bottom, very hard bottoms would require special implanting methods involving high installation

94%
- 5%
89%

what are our figures on destruction on an annual basis?

subtract % applicable due to other, unstable, etc. Notes here - in sec. below.

destruction

Local boating population is opposed to increasing of aids

← 25% of 20

RED STAR'S EXHIBIT 34

costs. However, the bottom conditions in 89 percent of the protected/semiexposed environments are satisfactory for structure installations.

(3) Operational Considerations Such as Traffic and Location Permanency Affect the Choice Between Buoys and Structures.

The type and density of traffic that a navigational aid serves may determine the practicality of substituting a structure for a buoy. If the aid is seriously damaged, the difficulty and cost of major repair or replacement is higher for a structure than for a buoy. } SEE THESE FIGURES ON THIS?

The permanency of the aid location also influences the choice. For instance, if the location is a channel that may require dredging, a buoy, which can be easily moved, may be the best choice. Such operational considerations will often favor buoy systems rather than structures. } WHAT ADVANCE NOTICE DOES CG GET FROM COPE OR OTHERS?

(4) Because Maintenance Requirements for Structures Are Less Than for Buoys, Structures Can Be Serviced by Smaller Vessels and On a Slightly Reduced Schedule

Vessels servicing structures would not require the lifting gear necessary for the servicing of a buoy and its mooring system. Therefore, in most cases structures could be serviced by smaller, less expensive vessels. However, if structures receive major damage or are destroyed, special equipment and vessels are required for repairs or replacement. } THIS REPORT STATES CG WOULD HAVE TO GO TO CINCINNATI DISTRICT

The estimated average number of servicing visits presently made to structures is slightly lower than the number made to buoys. Buoys are often located where the potential for damage is high, and so are visited more frequently than structures to assure their reliability as aid systems. Structures are generally positioned in less hazardous locations, and their greater stability is conducive to better signal equipment reliability and thus to a slight reduction in the number of service visits required. } DO WE ELIMINATE BUOYS IN HAZARDOUS LOCATIONS FROM CONSIDERATION?

(5) In Summary, Technical, Operational, Administrative, and Local Considerations Limit the Application of Minor Marine Structures As Short-Range Aids to Navigation.

An estimated 19.7 percent (approximately 5100) of all buoys in service today could be replaced by minor marine structures. Of these, about 93 percent are unlighted buoys that could be replaced by daybeacons and about 7 percent are lighted buoys that could be replaced by lights in the water. These estimates are based on an analysis of average conditions, summary statistics, and samplings of

RED STAR'S EXHIBIT 34

True!
expert opinions. However, the final decision to replace a buoy with a marine structure must depend largely on specific local conditions and the history of the area.

2. ECONOMIC CONSIDERATIONS

These conclusions are based on the analyses and findings reported in Chapter IV and Appendices B, C, D, and E.

(1) The Primary Cost Element for Both Structures and Buoys Is the Servicing Vessel.

is there a history of costs for servicing Vandalia's structure?
In the protected/semiexposed environment, servicing vessel costs represent the following percentages of the life-cycle costs of aids to navigation, when these costs are converted to an annual basis.

Type of Navigation Aid in Water	Servicing Unit Cost As a Percentage of Life-Cycle Cost
Daybeacons	72
Lights	64
Unlighted steel buoys	83
Unlighted plastic buoys	87
Lighted steel buoys	80
Lighted plastic buoys	86

Thus, the buoy and structure costs presently represent only 13 to 28 percent of the total costs.

(2) The Life-Cycle Costs of Structures and Buoy Systems Are Comparable When the Servicing Vessels Are Comparable.

On an annual basis, daybeacons cost 1.1 percent more than unlighted plastic buoys and 2.6 percent less than unlighted steel buoys, if the same servicing vessels are employed for both structures and buoys. Under the same conditions, lights on marine structures cost 2.4 percent less than lighted plastic buoys and 8.7 percent less than lighted steel buoys.

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- (3) **Some Cost Savings Can Be Realized by Maximum Conversion to Structures If Serviced by the Vessel Mix That Presently Services Structures.**

If buoys in the estimated maximum number (approximately 5100) are replaced by appropriate structures on a one-to-one basis, and if servicing vessels such as are presently employed to service structures are used, a total annualized savings of \$1.3 million could be achieved over the present annualized costs of \$36.7 million for the short-range aid-to-navigation system. However, no appreciable cost savings are possible if the structures are serviced by the vessels presently servicing the buoys.

- (4) **Significant Cost Savings Could Be Realized By Using Improved Servicing Schedules for Both Buoys and Structures.**

Maximum conversion from buoys to structures accompanied by a reasonable reduction in servicing schedules could reduce the current annual system cost of \$36.7 million by \$7.1 million (or 19.4 percent). Most of these savings would result from reduced servicing schedules.

- (5) **Maximum Cost Savings Could Be Achieved by Improved Servicing Schedules and Use of Smaller Servicing Vessels.**

Maximum conversion to structures, use of plastic for the remaining buoys, a reasonable reduction in servicing schedules, and use of a postulated mix of smaller servicing vessels for buoys and structures would result in a reduction of \$10.4 million (28.3 percent) from the current annual cost of \$36.7 million for the short-range aid-to-navigation system.

- (6) **In Summary, Cost Savings Can Result from Conversion of Buoys to Structures Only if Action Is Also Taken to Reduce Service Unit Costs.**

Cost savings cannot be achieved by replacing buoys with structures without concurrent changes in the size of units now servicing those buoys to be replaced. The magnitude of possible cost savings depends on the replacement ratio of structures to buoys and the extent to which appropriately smaller servicing units are used for the new structures. The savings could range between \$1 and \$2 million annually (2 to 6 percent of total system costs).

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Considerably greater savings are achievable, however, (over \$10 million annually or 28 percent of total system costs) through a combination of reduction in service schedules and size of service units for both buoys and structures, maximum conversion to structures, and use of plastic for the remaining buoys. The largest part of these total savings are from service schedule improvements.

RECOMMENDATIONS

The findings and conclusions presented above are the basis for the following recommendations:

- (1) That the Coast Guard Encourage Districts to Install Structures Instead of Buoys Wherever Local Conditions Are Favorable.

Very Good
Principal

To support this recommendation, Coast Guard Headquarters should continue its efforts to simplify the administrative work involved in establishing or replacing structures, and to furnish the requisite funding. In addition, guidelines and uniform estimating procedures should be provided to the Districts for use in comparing the life-cycle cost of a buoy system with that of a proposed substitute structure. Cost guidelines based on Coast Guard-wide data are included in this report as Appendix E. With suitable modifications to allow for conditions and costs on a district or local basis, these guidelines should be of substantial use to decision-makers in choosing between a buoy and a structure for a particular location.

Modifications will
yield local
guidelines allow
PSA to, so why
then with general
guidelines, not all?

This would be
the average
cost & validity in
a given dist
is open to
serious quest

- (2) That the Effort on the Simplified Aids to Navigation Data System (SANDS) Program Be Increased to Allow Early Revision of the Present Servicing Schedules for Short-Range Aids to Navigation.

Additional statistical information on outages and servicing frequencies is needed from SANDS to identify ways of increasing the efficiency with which aids to navigation are serviced, and also to provide data for the design and acquisition of new aid-to-navigation systems and servicing facilities.

This is tool
most useful to
NN for
Review & decision
making

RED STAR'S EXHIBIT 34

III. TECHNICAL AND OPERATIONAL CONSIDERATIONS

Many types of minor marine structures are presently in use as short-range aids to navigation--some in the water, others on the shore along rivers or at harbor entrances. This chapter is concerned only with structures installed in the water, and with the potential for greater use of this type of aid as a replacement for buoys. It presents a discussion of the practical limitations on structure installation and a comparison of operational effectiveness and maintenance requirements of structures and buoys. A cost comparison between structures and buoys is provided in Section IV.

1. TECHNICAL CONSTRAINTS

Data on the effects of environment, water depth, and bottom conditions on minor marine structures were obtained from the following sources:

- . sampling of SANDS data
- . quarterly reports on aids in each district
- . responses from the districts to a questionnaire on minor marine structures
- . interviews with operations and engineering personnel from Coast Guard Headquarters, the districts, and commercial pile driving concerns.

It should be emphasized that a decision to replace a buoy or system of buoys with minor structures is primarily a matter for local determination within the framework of Headquarters policy and funding programs. The analysis developed below was performed to estimate the number of buoys that, from the technical and operational standpoints, are practical candidates for replacement by minor structures.

(1) Environmental Limitations

For purposes of this study, existing Coast Guard navigational buoy and structure systems were classified according to the nature of the environmental areas in which they operate. The environmental classes considered were:

RED STAR'S EXHIBIT 34

- . fresh water subject to heavy ice conditions
- . unstable rivers
- . exposed water
- . protected/semiexposed water.

Definitions of these environmental areas are provided in Appendix A. The discussion below concerns the feasibility of substituting structures for buoys in each of the environments considered.

1. Fresh Water Subject to Heavy Ice Conditions

Most marine structures installed in the water are of simple single- or multiple-pile design and are constructed primarily of wood, although some geographic areas favor steel or concrete. In the Ninth District, which is predominantly an environment of fresh water subject to heavy ice conditions, the only satisfactory method of installation is to use expensive static gravity structures, particularly in the open lakes or connecting channels, because simple single- or multiple-pile structures cannot withstand the rigors of severe ice conditions. This statement is confirmed by the experience of the Canadian Department of Transportation and the Saint Lawrence Seaway Development Corporation. Examples of their experience are given below.

The Canadian static cell type structures installed in the Detroit-Windsor area in recent years cost about \$150,000. On the basis of the data given in Appendix E, it is estimated that, if these structures had a life of 40 years in the protected/semiexposed environment and were serviced by small craft, they still would cost 2.5 to 4 times as much as buoys serviced by tenders, on a life-cycle basis.*

Massive, concrete structures, pyramidal in form and topped with steel towers, were built in the Saint Lawrence Seaway prior to 1958. These structures, which have not failed in spite of severe ice conditions, were estimated to cost more than \$100,000.

The Saint Lawrence Seaway Development Corporation has more recently installed tubular steel structures, set in concrete under water. The cost of establishing these structures under contract ranged from \$5,000 to \$20,000 per structure. Experience indicates that these structures are satisfactory for protected waters but not for the open water.

* See Figure E-8, Appendix E.

RED STAR'S EXHIBIT 34

Because the cost of structures suitable for use in fresh water subject to severe ice conditions is so high, it was decided that the substitution of structures for buoys in this environment is not practicable.

2. Unstable Rivers (*ACT UNSTABLE WATERWAYS in general*)

It would not be practical to substitute minor marine structures for uncharted buoys in unstable rivers because the buoy locations are constantly changing. In addition, the high water levels and currents common in this environment would necessitate substantial and expensive structures.

3. Exposed Waters

According to SANDS data, only 5 percent of the existing minor marine structures are located in exposed waters, and a SANDS sample indicates that the buoys located in this environment and in 20 feet of water or less constitute only 2.4 percent of the total buoy population. This sample included both lighted and unlighted buoys and consisted of approximately half of all buoys in the exposed environment. Light List data confirmed the results of the SANDS sampling, also showing that 2.4 percent of all buoys were located in this environment, and in 20 feet of water or less.

Because these percentages are so small and because the costs of installing minor marine structures in the exposed water environment would be so high, the potential for substituting structures for buoys in this environment was not considered further in this study.

4. Protected/Semiexposed Waters

The greatest potential for replacing buoys with minor marine structures is in the semiexposed and protected water environments. Over 90 percent of all structures* and 42 percent of all buoys are presently located in this environment. In this study, only buoys in this environment were considered for replacement by fixed structures. The percentages of lighted and unlighted buoys in this environment are listed in the tabulation below, which shows the good agreement of the two data sources - the Light List counts and the SANDS sample.

*Area subject
to all noted
restrictions
plus local
conditions*

* See Figure A-1, Appendix A.

RED STAR'S EXHIBIT 34

Percentage of Lighted and Unlighted Buoys
in the Protected Semiexposed Environments

	Light List Data	SANDS Data	Average
Lighted buoys	197	187	18.5%
Unlighted buoys	81	82	81.5

(2) Water Depth Limitations

The maximum water depth in which a single- or multiple-pile structure can be successfully installed depends on the type of bottom as well as on the environment.* Hard bottoms allow for sound seating of the structure and installation at greater depths. The consensus of Coast Guard Headquarters and district engineers and of representatives of commercial firms that install marine structures is that depths of 15 to 20 feet are the practical maximum for nongravity-type structures suitable for aids to navigation. This opinion is based on the practical limitations for sound, durable structures - not on the availability of the required installation equipment.

Table 1 and Figure 1 present the SANDS sample data on the cumulative distribution of existing structures by depth of water and bottom condition. The data indicate that 98 percent of all existing Coast Guard marine structures are installed in 20 feet of water or less, with 80 percent in 10 feet or less.

Tables 2 and 3 are cumulative summaries of the distribution of buoys (both lighted and unlighted) at different depths in the protected/semiexposed environment, as determined from a SANDS sample and from Light List data, respectively. The data from the two sources are presented graphically in Figure 2. Comparison of Figures 1 and 2 indicates good agreement of the two data sources. The average cumulative percentage of lighted buoys in 20 feet of water or less is 20.6 percent (Figure 1), and the comparable figure for unlighted buoys is 67 percent (Figure 2).

On the basis of the consensus of informed opinion and the data on existing structures and buoys, it was decided that, while marine structures can be installed in deeper water, 20 feet is the maximum practical depth and the limiting depth for consideration in this study.

* Marine bottom conditions are defined in the following section (3).

RED STAR'S EXHIBIT 35.

BURLINGHAM UNDERWOOD & LORD

HERBERT M. LORD
 HERVEY C. ALLEN
 ELLIOTT B. NIXON
 WILLIAM M. KIMBALL
 ELKAN TURK, JR.
 JAMES W. LYNCH
 KENNETH H. VOLK
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 ROBERT B. POHL
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 DAVID L. FOBES
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 TELEX: RCA 235661
 TWX: 710 581 6236

25 BROADWAY, NEW YORK, N.Y. 10004

JOAN MORAN
 Barge ROBERT L. POLING
 Grounding - January 18, 1976
Our File: 9-7000-5

January 19, 1976

United States Coast Guard
 Merchant Marine Investigating Section
 Battery Park Building
 New York, N.Y. 10004

Attention: Senior Investigating Officer

Gentlemen:

Please find enclosed original and two copies of Report of Vessel Casualty (CG-2692) relating to the above grounding.

We assume that the Captain or owner of Barge ROBERT L. POLING will file a similar report.

If you require anything further, please let us know.

Very truly yours,

BURLINGHAM UNDERWOOD & LORD

Kenneth H. Volk

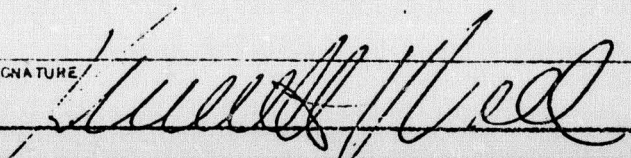
KHV:et
 Encl.

cc: Moran Towing & Transportation Co., Inc.
 One World Trade Center - Suite 5335
 New York, N.Y. 10048
Attn.: Mr. Joseph F. Meseck

RED STAR'S EXHIBIT 35

TREASURY DEPARTMENT U. S. COAST GUARD CG-2692 (Rev. 4-61)	REPORT OF VESSEL CASUALTY OR ACCIDENT.	Form Approved Budget Bureau No. 43-R114.5 REPORTS CONTROL SYMBOL MVI-4017
INSTRUCTIONS		
1. An original and two copies of this form shall be submitted, without delay, to the Officer in Charge, Marine Inspection, in whose district the casualty occurred, or in whose district the vessel first arrived after such casualty. 2. If the person making the report is a licensed officer on a vessel required to be manned by such officer, he must make the report in writing and in person to the proper Marine Inspector. If because of distance it may be inconvenient for such an officer to submit the report in person, he may submit the required number of copies by mail. However, to avoid delay in investigations, it is desired that reports be submitted in person. 3. This form should be completed in full; blocks which do not apply to a particular case should be indicated as "NA". Where answers are unknown or none, they should be indicated as such. All copies should be signed. NOTE: (1) Report all deaths and injuries, which incapacitate in excess of 72 hours, on CG-924E whether or not there was a vessel casualty. (2) Attach separate Form CG-924E to this report for each person killed or injured and incapacitated in excess of 72 hours as a result of the vessel casualty reported herein.		
TO: Officer in Charge, Marine Inspection, Port of New York		DATE SUBMITTED January 19, 1976
I PARTICULARS OF VESSEL		
1. NAME OF VESSEL JOAN MORAN	2. OFFICIAL NUMBER 509126	3. HOME PORT Wilmington, Del.
4. NATIONALITY U.S.A.	5. TYPE OF VESSEL (Frt., pass., tkr., etc) Tug	6. PROPULSION (Steam, diesel, etc) Diesel
7. GROSS TONNAGE 298	8. REGISTERED LENGTH OR L.O.A. 102 feet	9. HULL MATERIALS Steel
10. YEAR BUILT 1967	11. RADIO EQUIPMENT ☒ TRANSMIT ☒ RECEIVE ☒ VOICE ☐ CW (Key)	
12. (a) RADAR EQUIPPED ☐ YES ☒ NO		(b) IF YES, RADAR OPERATING AT TIME OF CASUALTY ☒ YES ☐ NO
13. (a) CERTIFICATE OF INSPECTION ISSUED AT PORT OF NA		(b) DATE CERTIFICATE OF INSPECTION ISSUED NA
14. (a) NAME OF MASTER OR PERSON IN CHARGE (Indicate which) Richard Swan		(b) DATE OF BIRTH April 12, 1926
		(c) LICENSED BY COAST GUARD ☒ YES ☐ NO
15. (a) NAME OF PILOT (If on board at time of accident) None		(b) PILOT SERVING UNDER AUTHORITY OF LICENSE ISSUED BY ☐ USCG NA ☐ STATE ☐ FOREIGN
16. (a) NAME OF OWNER(S), OPERATOR(S) OR AGENT (Indicate which) Moran Towing & Transportation Co., Inc.		(b) ADDRESS OF OWNER(S), OPERATOR(S), OR AGENT One World Trade Center New York City, New York
II PARTICULARS OF CASUALTY		
17. (a) DATE OF CASUALTY January 18, 1976	(b) TIME OF CASUALTY (Local or zone) 0245	(c) ZONE DESCRIPTION EST.
(d) TIME OF DAY ☐ DAY ☒ NIGHT ☐ TWILIGHT		
18. LOCATION OF CASUALTY (Latitude and longitude; distance and TRUE bearing from charted object; dock; anchorage; etc.) .3 Mile South Con Hook Beacon No. 27, Hudson River		
19. BODY OF WATER (Geographical name) Hudson River	20. RULES OF THE ROAD APPLICABLE ☒ INLAND ☐ GREAT LAKES ☐ WESTERN RIVERS ☐ INTERNATIONAL ☐ OTHER (Specify)	
21. (a) DID CASUALTY OCCUR WHILE UNDERWAY: ☒ YES ☐ NO		
(b) IF YES, LAST PORT OF DEPARTURE Linden, New Jersey		(c) IF YES, WHERE BOUND WHEN CASUALTY OCCURRED Rensselaer, N.Y.
22. (a) WEATHER CONDITIONS WHEN CASUALTY OCCURRED: ☐ CLEAR ☒ PARTLY CLOUDY ☐ OVERCAST ☐ FOG ☐ RAIN ☐ SNOW ☐ OTHER (Specify)		
(b) VISIBILITY (Miles, yds., ft., etc.) Good	(c) WIND DIRECTION N.W.	(d) FORCE IN KNOTS 2
(e) GUSTY ☐ YES ☒ NO	(f) AIR TEMPERATURE Very cold	
23. (a) SEA CONDITIONS WHEN CASUALTY OCCURRED NA	(b) SEA WATER TEMP (If available) NA	(c) HEIGHT OF SEA NA
(d) DIRECTION OF SEA NA	(e) HEIGHT OF SWELL NA	(f) DIRECTION OF SWELL NA
24. (a) NATURE OF CARGO (Specify) NA	(b) AMOUNT OF DRY CARGO (Long tons) NA	(c) AMOUNT OF BULK LIQUID (Long tons) NA
	(d) AMOUNT OF DECK LOAD (Long tons) NA	

RED STAR'S EXHIBIT 35

25. (a) DRAFT FORWARD About 12'		(b) DRAFT AFT About 15'	
26. (a) TYPES OF LIFESAVING EQUIPMENT USED, IF ANY NA		(b) NO. LIVES SAVED WITH LIFE-SAVING EQUIPMENT NA	
(c) LIFESAVING EQUIPMENT SATISFACTORY ☐ YES ☐ NO (If no, explain in Item 34) NA			
27. CREW PASSENGERS OTHER (Specify) NUMBER ON BOARD 6 DEAD/MISSING INCAPACITATED (over 3 days)		28. ESTIMATED LOSS/DAMAGE TO YOUR VESSEL \$ None ESTIMATED LOSS/DAMAGE TO YOUR CARGO \$ None ESTIMATED LOSS/DAMAGE TO OTHER PROPERTY \$ Unknown (Specify whether vessel, dock, bridge, etc.)	
29. NATURE OF THE CASUALTY (Check one or more of the following. Give pertinent details in Item 30.)			
☐ COLLISION WITH OTHER VESSEL(S) (Specify)		☐ EXPLOSION/FIRE (Other)	
☐		☒ GROUNDING	
☐ COLLISION WITH FLOATING OR SUBMERGED OBJECTS		☐ FOUNDER (Sinking)	
☐ COLLISION WITH FIXED OBJECT (Piers, bridges, etc.)		☐ CAPSIZING WITHOUT SINKING	
☐ COLLISION WITH ICE		☐ FLOODING, SWAMPING, ETC., WITHOUT SINKING	
☐ COLLISION WITH AIDS TO NAVIGATION		☐ HEAVY WEATHER DAMAGE	
☐ COLLISION (Other)		☐ CARGO DAMAGE (No vessel damage)	
☐ EXPLOSION/FIRE (Involving cargo)		☐ MATERIAL FAILURE (Vessel structure)	
☐ EXPLOSION/FIRE (Involving vessel's fuel)		☐ MATERIAL FAILURE (Engineering machinery, including main propulsion, auxiliaries, boilers, evaporators, deck machinery, electrical, etc.)	
☐ FIRE (Vessel's structure or equipment)		☐ EQUIPMENT FAILURE	
☐ EXPLOSION (Boiler and associated parts)		☐ CASUALTY NOT NAMED ABOVE	
☐ EXPLOSION (Pressure vessels and compressed gas cylinders)			
30. DESCRIPTION OF CASUALTY (Events and circumstances leading to casualty and present when it occurred. Attach diagram and additional sheets, if necessary) Pushing loaded Barge ROBERT POLING up river. Barge grounded on rocky shoal south of Con Hook. Bouy No. 25 which marks shoal was almost completely submerged.			
31. DAMAGE (Give brief general description and state if vessel is a total loss.) Barge bottom damaged forward. Extent of damage unknown. No pollution.			
III ASSISTANCE AND RECOMMENDATIONS			
32. AUTO ALARM TRANSMITTED BY YOUR VESSEL: ☐ YES ☒ NO			
33(a) ASSISTANCE RENDERED BY STATIONS AND VESSELS (Include Coast Guard and other stations and vessels) U.S.C.G. Cutter SAUK assisted.		(b) OTHER ASSISTANCE RENDERED Barge HYGRADE NO. 24 offloaded some cargo from Barge ROBERT POLING.	
34. RECOMMENDATIONS FOR CORRECTIVE SAFETY MEASURES PERTINENT TO THIS CASUALTY (Include explanation of unsatisfactory lifesaving equipment) NONE			
TITLE Attorney		SIGNATURE 	

RED STAR'S EXHIBIT 41.

STARTING HOURS:

6-1800
WATCH A
0001X/200
5600

40223

TUG - OCEAN PRINCE

NO. 2948

DAILY PAYROLL SHEET

(TYPE CLEARLY AND DISTINCT)

DATE SUN. FEB-3-1974

POSITION	CHECK WATCH (✓)			NAME	IDENTIFICATION NUMBER	FOOD	WORK HOURS	S.O. TIME HOURS	LOCATION WORK LAKE HARBOR SOUND, ETC.
	A	B	C						
10 CAPTAIN	✓			J. KIERNAN	N/171P		18		5
11 ALT. CAPT.		✓		W. F. RAINER	11 5221		18		0
20 1ST MATE									4
21 2ND "									11
									0
30 ENGINEER. CHIEF	✓			W. A. FOWLER	11 521P		18		
31 " ALT. CHIEF									
32 " 1ST ASST.									
33 " 2ND ASST.									
40 WIPER									
50 DECKHAND	✓			F. Mc Cloud	" 5349		18		
50 "	✓			M. HERBERT	" 5195		18		
50 "									
50 "									
60 COOK				J. H. McMILLAN	5234		18		
60 RELIEF COOK									
TOTALS							108		

COMMISSARY PER DAY PER MAN \$ _____ NO. MEN ON BOARD _____ AMOUNT \$ _____

RED STAR'S EXHIBIT 41

LOG OF THE DAY

(INCLUDING DETAIL OF TIME, WEATHER AND DELAYS, ETC.)

EXPLAIN B.O. TIME BELOW:

B.O. TIME, LINES, ETC.

NOTIFY OFFICE
AT ONCE IF
ANY CHANGE MADE

CERTIFIED CORRECT

NAME & NUMBER - MASTER

MAIL THIS SHEET DAILY TO: PAYMASTER

764 COURT STREET, BROOKLYN, N.Y. 11231

GOVERNMENT'S EXHIBIT AA.

REPORT OF ACCIDENT AND DAMAGE

40203

DIESEL VESSEL OPERATORS, INC., 764 COURT STREET, BROOKLYN 31, N. Y.

ALL ACCIDENTS ARE TO BE REPORTED ON THIS FORM TO THIS OFFICE, IN DUPLICATE, IMMEDIATELY

VESSEL
REPORTING *Ocean Prince*PERSON
REPORTING *Walter D. Smith* POSITION *Master*

PARTICULARS OF CASUALTY

DATE OF
ACCIDENT *Feb 3, 1974*TIME *01:30*DAY OF
WEEK *SUN*PLACE OF
ACCIDENT *Bay 21*BODY OF
WATER *Hudson River*WEATHER *snowing*

WIND

VISIBILITY *poor*

SEA CURRENT

TIDE *Ebb*

HIGHWATER

NAME OF VESSEL
THAT CAUSED DAMAGE *Ocean Prince*TUG AND BARGE UNIT
DESCRIBE MAKE UP OF TOW *on pushing gear*LOADED ☒

LIGHT

BALLAST

IF LOADED
DESCRIBE CARGO *4. oil*

CARGO LOSS OR DAMAGE?

IF SO, ATTACH LOADING AND DISCHARGE TICKETS

DRAFT
FORWARDDRAFT
AFTENROUTE
FROM *CON Hook EXXON*ENROUTE
TO *Kingston N.Y.*PERSONAL INJURY INVOLVED? *NONE*

IF SO, ATTACH EMPLOYEE INJURY REPORT FORM

GOVERNMENT'S EXHIBIT AA

PARTICULARS OF DAMAGE
(VESSEL, STRUCTURE, ETC.)

EL AGED	<i>New London</i>	DESCRIBE DAMAGE	<i>Periscope 1st & 2nd port</i>
EL AGED			
EL AGED			
CTURE AGED			

WITNESSES
(NAME, VESSEL, ADDRESS, ETC.)

DESCRIBE FULLY HOW ACCIDENT OCCURED

buoy "21" was under the ice, visibility was not too good, could not see buoy on radar, snowing

ED: *Walter C. ...* VESSEL *Ocean Prince* POSITION *Lat. 41° 15' N* DATE *2/1/54*

GOVERNMENT'S EXHIBIT AA

DESCRIBE FULLY HOW ACCIDENT OCCURED (CONT)

Feb 3, 1974

Walter & Reimer mate on the Ocean Pioneer, with the barge near London, on the pushing gear, we were bound from Exxon Con Hook to Kingston N.Y. with a load of 4 oil, just south off Con Hook Island, on the Hudson River, Con barge "21" was under the ice when I went aground. Radar was on, also the searchlight but was still unable to see the barge. The accident occurred at 01:30 Feb 3, 1974, Damaged to the barge was four feet and 1st & 2nd port tanks.

Walter & Reimer

DIAGRAM

ONED

VESSEL

POSITION

DATE

GOVERNMENT'S EXHIBIT BB.

AMERICAN
PRACTICAL NAVIGATOR

BOWDITCH

1958



U. S. NAVY HYDROGRAPHIC OFFICE

GOVERNMENT'S EXHIBIT BB

H.O. Pub. No. 9

AMERICAN PRACTICAL NAVIGATOR

AN EPITOME OF NAVIGATION

ORIGINALLY BY
NATHANIEL BOWDITCH, LL.D.

PUBLISHED BY THE
U. S. NAVY HYDROGRAPHIC OFFICE
UNDER THE AUTHORITY OF THE
SECRETARY OF THE NAVY



UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1958

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Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price \$6.25

GOVERNMENT'S EXHIBIT BB

PILOTING

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Required. (1) Distance from the light at 1140.

(2) Distance from the light when it is broad on the port beam.

Solution (fig. 910). (1) The difference between the course and the first bearing ($050^\circ - 024^\circ$) is 26° , and the difference between the course and the second bearing ($050^\circ + 360^\circ - 359^\circ$) is 51° .

(2) From table 7 the two numbers (factors) are 1.04 and 0.81, found by interpolation.

(3) The distance run between bearings is 2.5 miles (10 minutes at 15 knots).

(4) The distance from the lighthouse at the time of the second bearing is $2.5 \times 1.04 = 2.6$ miles.

(5) The distance from the lighthouse when it is broad on the beam is $2.5 \times 0.81 = 2.0$ miles.

Answers.—(1) D 2.6 mi., (2) D 2.0 mi.

Certain combinations of angles provide quick mental solution without the need for table 7. If the second difference (angle CBD) is double the first difference (angle BAD), triangle BAD is isosceles (art. 028), with equal angles at A and D . Therefore side AB (the run) is equal to side BD (the distance off at the time of the second bearing). This is called **doubling the angle on the bow**. If the first angle is 45° and the second 90° , the distance run equals the distance when broad on the beam. These are called **bow and beam bearings**. If the first angle is $63^\circ 5'$ and the second 90° , the distance off when abeam is about twice the distance run. If the angles are $71^\circ 5'$ and 90° , the distance off when abeam is about three times the distance run. If the first angle is $22^\circ 5'$ and the second 45° , the distance at which the object will be passed abeam is about $7/10$ of the distance run between bearings. If the angles are $22^\circ 5'$ and $26^\circ 5'$, the distance abeam will be about $7/3$ of the distance run. If the angles are 30° and 60° , the distance of the object when abeam will be about $7/8$ of the distance run between bearings. If the two angles are such that their natural cotangents differ by unity, the distance abeam will be equal approximately to the distance run between bearings. Some combinations having approximately this relationship are $22^\circ - 34^\circ$, $25^\circ - 41^\circ$, $27^\circ - 46^\circ$, $32^\circ - 59^\circ$, and $40^\circ - 79^\circ$.

If either the course or speed is in error, the result will be inaccurate.

911. Safe piloting without a fix.—A fix or running fix is not always necessary to insure safety of the vessel. If a ship is proceeding up a dredged channel, for instance, the only knowledge needed to prevent grounding is that the ship is within the limits of the dredged area. This information might be provided by a range in line with the channel. A fix is not needed except to mark the point at which the range can no longer be followed with safety. Such a point is usually marked by a buoy.

Under favorable conditions a **danger bearing** might be used to insure safe passage past a shoal or other danger. Refer to figure 911a. A vessel is proceeding along a coast, on course line AB . A shoal is to be avoided. A line HX is drawn from lighthouse H , tangent to the outer edge of the danger. As long as the bearing of light H is

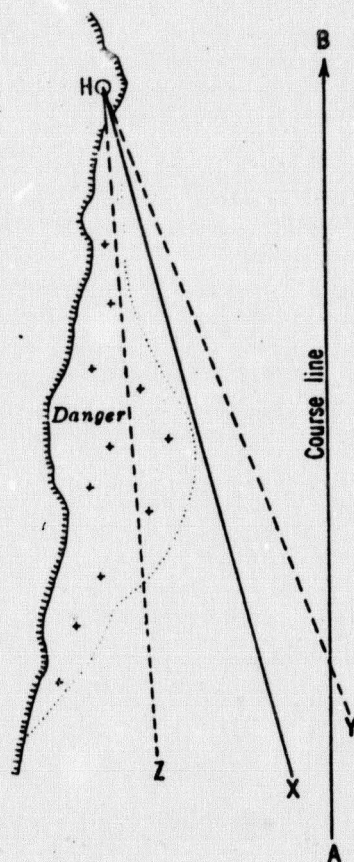


FIGURE 911a.—A danger bearing.

GOVERNMENT'S EXHIBIT BB

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PILOTING

less than XII , the danger bearing, the vessel is in safe water. An example is YII , no part of the bearing line passing through the danger area. Any bearing greater than XII , such as ZII , indicates a possible dangerous situation. If the object is passed on the port side, the safe bearing is less than the danger bearing, as shown in figure 911a. If the object is passed on the starboard side, the danger bearing represents the minimum bearing, safe ones being greater. To be effective, a danger bearing should not differ greatly from the course, and the object of which bearings are to be taken should be easily identifiable and visible over the entire area of usefulness of the danger bearing. A margin of safety might be provided by drawing line $II'X$ through a point a short

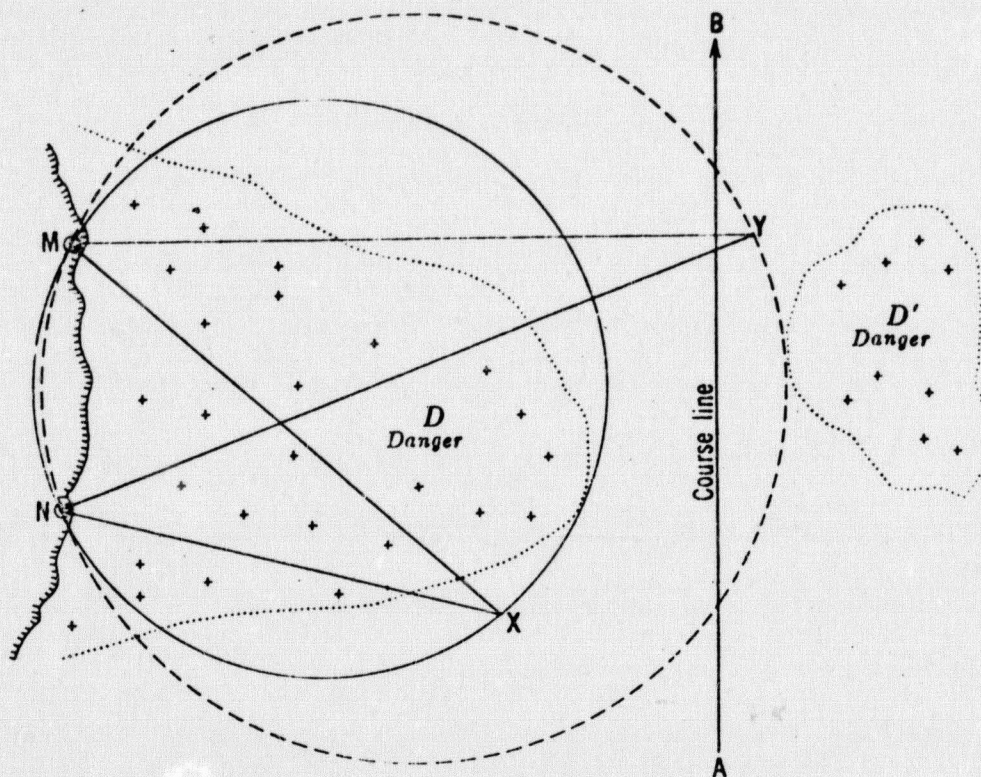


FIGURE 911b. Horizontal danger angles.

distance off the danger. If a natural or artificial range is available as a danger bearing, it should be used.

A vessel proceeding along a coast may be in safe water as long as it remains a minimum distance off the beach. This information may be provided by any means available. One method useful in avoiding particular dangers is the use of a danger angle. Refer to figure 911b. A ship is proceeding along a coast on course line AB , and the captain wishes to remain outside a danger D . Prominent landmarks are located at M and N . A circle is drawn through M and N and tangent to the outer edge of the danger. If X is a point on this circle, angle MXN is the same as at any other point on the circle (except that part between M and N). Anywhere within the circle the angle is larger and anywhere outside the circle it is smaller. Therefore, any angle smaller than MXN indicates a safe position and any angle larger than MXN indicates possible danger. Angle MXN is therefore a maximum horizontal danger

OVERSIZE FOLDOUT(S) FOUND HERE IN
THE PRINTED EDITION OF THIS VOLUME
ARE FOUND FOLLOWING THE LAST PAGE
OF TEXT IN THIS MICROFICHE EDITION

SEE FOLDOUT NO. 3

GOVERNMENT'S EXHIBIT FF.

DEPARTMENT OF
TRANSPORTATION
U. S. COAST GUARD
CG-2692 (Rev. 3-67)

R

USA 88a-476
(ED. 4-23-71)

GOVERNMENT

EXHIBIT
U. S. DIST. COURT
S. D. OF N. Y.

*Gov't
F B I*

CIDENT

Form Approved Budget Bureau
No. 48-2114-3
REPORTS CONTROL SYMBOL
NYI-4017

1. An original and two copies of this form without delay, to the Officer in Charge whose district the casualty occurred, vessel first arrived after such casualty.
2. If the person making the report is a licensee required to be manned by such officer report in writing and in person to the officer. If because of distance it may be inconceivable to submit the report in person, he may submit a number of copies by mail. However, in all cases, it is desired that reports be submitted as soon as possible.

TO: Officer in Charge, Marine Inspection

This form should be completed in full; blocks which do not apply to a particular case should be indicated as "NA". If the cause of casualty is unknown or none, they should be indicated as "NA". All copies should be signed. All deaths and injuries, which incapacitate for 72 hours, on CG-924E whether or not it is a vessel casualty. Separate Form CG-924E to this report for persons killed or injured and incapacitated for 72 hours as a result of the vessel casualty reported herein.

ork DATE SUBMITTED 13 Feb 74

1. NAME OF VESSEL OCEAN PRINCE	2. COUNTRY N.Y.	4. NATIONALITY U.S.
5. TYPE OF VESSEL (Pri., pass., thr., etc) Tugboat	6. PROPULSION (Steam, diesel, etc) Diesel	7. GROSS TONNAGE 198
9. HULL MATERIALS Steel	10. YEAR BUILT 1958	8. REGISTERED LENGTH OR L.O. 94.7
12. (a) RADAR EQUIPPED ☒ YES ☐ NO	11. RADIO EQUIPMENT ☒ TRANSMIT ☒ RECEIVE ☒ VOICE ☐ CW (K)	
13. (a) CERTIFICATE OF INSPECTION ISSUED AT PORT OF None (Uninspected Vessel)	(b) IF YES, RADAR OPERATING AT TIME OF CASUALTY ☒ YES ☐ NO	
14. (a) NAME OF MASTER OR PERSON IN CHARGE (Indicate which) Walter Reimer-persson in charge	(b) DATE OF BIRTH Unk	
15. (a) NAME OF PILOT (If on board at time of accident) None	(c) LICENSED BY COAST GUARD ☒ YES ☐ NO	
16. (a) NAME OF OWNER(S), OPERATOR(S) OR AGENT (Indicate which) Red Star Marine Services, Inc.-- Operator	(b) PILOT SERVING UNDER AUTHORITY OF LICENSE ISSUED BY ☐ USCG ☒ N/A ☐ STATE ☐ FOREIGN	
(b) ADDRESS OF OWNER(S), OPERATOR(S), OR AGENT 500 Fifth Avenue New York, New York 10036		

II PARTICULARS OF CASUALTY

17. (a) DATE OF CASUALTY February 3, 1974	(b) TIME OF CASUALTY (Local or zone) 0130	(c) ZONE DESCRIPTION EDT	(d) TIME OF DAY ☐ DAY ☒ NIGHT ☐ TWILIG
18. LOCATION OF CASUALTY (Latitude and longitude; distance and TRUE bearing from charted object; dock; anchorage; etc.) Bouy #21, Con Hook Island, Hudson River			
19. BODY OF WATER (Geographical name) Hudson River	20. RULES OF THE ROAD APPLICABLE ☒ INLAND ☐ GREAT LAKES ☐ WESTERN RIVERS ☐ INTERNATIONAL ☐ OTHER (Specify)		
21. (a) DID CASUALTY OCCUR WHILE UNDERWAY: ☒ YES ☐ NO			
(b) IF YES, LAST PORT OF DEPARTURE Con Hook, Exxon Terminal, Bayonne, N.J.		(c) IF YES, WHERE BOUND WHEN CASUALTY OCCURRED Kingston, New York	
22. (a) WEATHER CONDITIONS WHEN CASUALTY OCCURRED: ☐ CLEAR ☐ PARTLY CLOUDY ☐ OVERCAST ☐ FOG ☐ RAIN ☒ SNOW ☐ OTHER (Specify)			
(b) VISIBILITY (Miles, yds., ft., etc.) Poor (1/2 mi.)	(c) WIND DIRECTION Unk	(d) FORCE IN KNOTS Unk	(e) GUSTY ☐ YES ☐ NO
(f) AIR TEMPERATURE Unk			
23. (a) SEA CONDITIONS WHEN CASUALTY OCCURRED Unk	(b) SEA WATER TEMP (If available) Unk	(c) HEIGHT OF SEA Unk	(d) DIRECTION OF SEA Unk
(e) HEIGHT OF SWELL Unk	(f) DIRECTION OF SWELL Unk		
24. (a) NATURE OF CARGO (Specify) None	(b) AMOUNT OF DRY CARGO (Long tons) None	(c) AMOUNT OF BULK LIQUID (Long tons) None	(d) AMOUNT OF DECK LOAD (Long tons) None
25. (a) DRAFT FORWARD 10'0"		(b) DRAFT AFT 10'6"	
26. (a) TYPES OF LIFESAVING EQUIPMENT USED, IF ANY None		(b) NO. LIVES SAVED WITH LIFESAVING EQUIPMENT None	
(c) LIFESAVING EQUIPMENT SATISFACTORY ☐ YES ☐ NO (If no, explain in item 34) N/A			

GOVERNMENT'S EXHIBIT FF

27	CREW	PASSENGERS	OTHER (Specify)	28	ESTIMATED LOSS/DAMAGE TO YOUR VESSEL	\$-0-
NUMBER ON BOARD	6	0	0		ESTIMATED LOSS/DAMAGE TO YOUR CARGO	\$-0-
DEAD MISSING	0	0	0		ESTIMATED LOSS/DAMAGE TO OTHER PROPERTY	\$Unk
INCAPACITATED (over 3 days)	0	0	0		(Specify whether vessel, dock, bridge, etc.)	
29 NATURE OF THE CASUALTY (Check one or more of the following. Give pertinent details in item 30.)						
COLLISION WITH OTHER VESSEL(S) (Specify)				EXPLOSION/FIRE (Other)		
				GROUNDING		
COLLISION WITH FLOATING OR SUBMERGED OBJECTS				FOUNDER (Sinking)		
				CAPSIZING WITHOUT SINKING		
COLLISION WITH FIXED OBJECTS (Piers, bridges, etc.)				FLOODING, SWAMPING, ETC. WITHOUT SINKING		
COLLISION WITH ICE				HEAVY WEATHER DAMAGE		
COLLISION WITH AIDS TO NAVIGATION				CARGO DAMAGE (No vessel damage)		
COLLISION (Other)				MATERIAL FAILURE (Vessel structure)		
EXPLOSION/FIRE (Involving cargo)				MATERIAL FAILURE (Engineering machinery, including main propulsion, auxiliaries, boilers, evaporators, deck machinery, electrical, etc.)		
EXPLOSION/FIRE (Involving vessel's fuel)						
FIRE (Vessel's structure or equipment)				EQUIPMENT FAILURE		
EXPLOSION (Boiler and associated parts)				CASUALTY NOT NAMED ABOVE		
EXPLOSION (Pressure vessels and compressed gas cylinders)						

30. DESCRIPTION OF CASUALTY (Events and circumstances leading to casualty and present when it occurred. Attach diagram and additional sheets, if necessary)

Tug OCEAN PRINCE proceeding northbound pushtowing the T/B NEW LONDON. Visability was poor due to snow ~~storm~~ storm,, Radar and searchlight were on. Unable to find the location of bouy #21. Vessel went inside the location of the bouy and struck the bottom with the Barge. (Bouy was submerged under ice.)

31. DAMAGE (Give brief general description and state if vessel is a total loss.)

No damage to the Tug OCEAN PRINCE.

III ASSISTANCE AND RECOMMENDATIONS

32. AUTO ALARM TRANSMITTED BY YOUR VESSEL: ☐ YES ☒ NO

33(a) ASSISTANCE RENDERED BY STATIONS AND VESSELS (Include Coast Guard and other stations and vessels)

None

(b) OTHER ASSISTANCE RENDERED

None

34. RECOMMENDATIONS FOR CORRECTIVE SAFETY MEASURES PERTINENT TO THIS CASUALTY (Include explanation of unsatisfactory lifesaving equipment)

None

TITLE

Insurance Manager

SIGNATURE

[Signature]

CFO

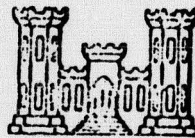
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GOVERNMENT'S EXHIBIT 001.

**WATERBORNE COMMERCE
OF THE UNITED STATES**

CALENDAR YEAR 1971

**PART 1
WATERWAYS AND HARBORS
ATLANTIC COAST**



**DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS**

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GOVERNMENT'S EXHIBIT 001

WATERBORNE COMMERCE
OF THE UNITED STATES

CALENDAR YEAR 1971

PART 1

WATERWAYS AND HARBORS
ATLANTIC COAST

COMPILED UNDER THE SUPERVISION OF
THE DIVISION ENGINEER, U. S. ARMY ENGINEER DIVISION
LOWER MISSISSIPPI VALLEY, CORPS OF ENGINEERS
VICKSBURG, MISSISSIPPI

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GOVERNMENT'S EXHIBIT 001

INTRODUCTION

This publication is one of a series containing statistics on the waterborne commerce of the United States during the calendar year 1971. Four of these publications present detailed data on the movements of commodities and vessels at the ports and harbors and on the waterways and canals of the United States, the Commonwealth of Puerto Rico, and the Virgin Islands, and the fifth contains summary data of the country as a whole. The numbers of the publications and the areas covered are:

Area

- Part 1 Atlantic Coast
- Part 2 Gulf Coast, Mississippi River System, and Antilles
- Part 3 Great Lakes
- Part 4 Pacific Coast, Alaska, and Hawaii
- Part 5 Waterborne Commerce of the United States (National Summaries)

Both the foreign and domestic commerce of the United States by water are included. Data on the foreign commerce were supplied to the Corps of Engineers by the Bureau of the Census; data for the compilation of the domestic statistics were collected by the several offices of the Corps of Engineers, Department of the Army, in compliance with various acts of Congress. The principal provision governing the collection of these data is included in the River and Harbor Act of September 22, 1922:

"Sec. 11. That owners, agents, masters, and clerks of vessels and other craft plying upon the navigable waters of the United States, and all individuals and corporations engaged in transporting their own goods upon the navigable waters of the United States, shall furnish such statements relative to vessels, passengers, freight, and tonnage as may be required by the Secretary of War: Provided, that this provision shall not apply to those rafting logs, except upon a direct request upon the owner to furnish specific information.

"That every person or persons offending against the provisions of this section shall, for each and every offense, be liable to a fine of \$100 or imprisonment not exceeding two months, to be enforced in any district court in the United States within whose territorial jurisdiction such offense may have been committed."

While the information as now collected and compiled is designed to meet the administrative requirements of the Department of the Army in connection with the duties assigned by Congress, it also provides useful data for other governmental departments, commercial and shipping concerns, and others interested in transportation.

Waterborne traffic movements were reported to the Corps of Engineers by all vessel operators of record on prescribed forms approved by the Office of Management and Budget under the Federal Reports Act of 1942 for those movements of their vessels which were classified as domestic traffic; namely, between United States ports, continental and noncontiguous, and on the inland rivers, canals, and connecting channels of the United States, Puerto Rico, and the Virgin Islands, excluding the Panama Canal. The reports were generally submitted on the basis of a vessel movement completed in one direction and, for movements with cargo, the origin and destination of the water transportation of each individual commodity. In compiling the data, the entire movement was included in the year in which the movement was completed even though the shipment may have originated in the preceding year, except that, beginning with calendar year 1961 statistics, a cut-off date of 28 February was established for the processing of reports from vessel operators covering the prior year's completed movements. Hence, reports of movements completed in 1971 but not reported to the Corps of Engineers until after 28 February 1972 will be included in the next year's, 1972, statistics rather than in this publication, while reports of movements completed in 1970 but reported to the Corps after 28 February 1971 are included in this publication.

Sponsored by the Office of Statistical Policy, Office of Management and Budget, a uniform system of classification for freight was developed with cooperation of all federal agencies engaged in

collecting and compiling data on shipping. This classification, the Commodity Classification for Shipping Statistics, is used for data on the foreign and domestic commerce presented in these publications, although some minor modifications exist in the foreign data which were necessitated by Bureau of the Census policies and procedures.

The domestic traffic includes all commercial movements between points in the United States, Puerto Rico, and the Virgin Islands. Traffic with the Panama Canal Zone is treated as foreign commerce. Cargo moved for the military agencies in commercial vessels is reported as ordinary commercial cargo; military cargo moved in Department of Defense vessels is omitted from these statistics.

All movements between the United States and foreign countries and between Puerto Rico and Virgin Islands, U.S.A., and foreign countries are classified as foreign traffic. Trade between United States territories and possessions, i.e., Guam, Wake, American Samoa, etc., and foreign countries is excluded.

These data are furnished to the Corps of Engineers by the Bureau of the Census under a working arrangement sponsored by the Office of Statistical Policy, Office of Management and Budget. The data are confined to movements by water, and are reconcilable with published reports of the Bureau of the Census. Shipments of domestic merchandise and re-exports of foreign merchandise are termed exports. The imports include inbound merchandise for direct consumption and entries into custom bonded storage and manufacturing warehouses. Intransit merchandise, defined by the Bureau of the Census as merchandise coming into the United States from a foreign country and shipped to a foreign country without having been entered as an import, is treated as an import when unloaded from a vessel and as an export when loaded on a vessel. Export shipments for use of the United States Armed Forces abroad are excluded from the statistics as are import shipments on Department of Defense owned and operated vessels. Foreign trade data of territories and possessions other than Puerto Rico and the Virgin Islands, which are under the jurisdiction of the Department of the Interior, were not furnished to the Corps of Engineers by the Bureau of the Census and are excluded from the statistics of both agencies.

Export shipments under the various foreign aid programs on Department of Defense operated vessels, either American flag commercial vessels under time, voyage, or space charter or vessels owned and operated by the Department of Defense, and various items (listed by the Census) which affect national security are not published in terms of the individual commodities shipped. Instead, a lump-sum tonnage figure is compiled and appears in these tables as commodity code 9999, "Department of Defense controlled cargo and Special Category Items."

The 1971 statistics on waterborne exports of domestic and foreign merchandise and non-Department of Defense shipments of Special Category commodities reflect fully compiled data for shipments to Canada individually valued at \$2,000 and over combined with estimated data for shipments valued \$251 - \$1,999, based on a 10-percent sample of such shipments. For countries other than Canada, the export statistics reflect fully compiled data for shipments valued \$500 and over combined with estimated data for shipments valued \$251 - \$499, based on a 50-percent sample of such shipments. Data on export shipments valued under \$251 are excluded from this report.

Import statistics for 1971 exclude data on shipments valued \$250 and under reported on both formal and informal entries. Informal entries generally contain items valued not more than \$250.

Foreign trade data furnished by Census are based on reports processed for Census' monthly data January through December and represent statistical year rather than calendar year data.

The figures on ton-miles are computed by the Corps of Engineers; each ton-mile figure reflects only the distance each ton of cargo, foreign or domestic, moved on the waterway de-

GOVERNMENT'S EXHIBIT 001

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WATERBORNE COMMERCE OF THE UNITED STATES, 1971

scribed in the section for which the figure is reported. The summary of ton-miles for the entire United States contained in Part 5 includes movements on the inland waterways and Great Lakes system only; cargoes, foreign and domestic, of deep-sea vessels are included only for that portion of the voyage that occurred in inland rivers, canals, or connecting channels - neither the carriage on the oceans and the Gulf of Mexico nor the tonnage moved among the territories and possessions, "Intraterritory Traffic," are taken into account.

Trips of vessels at ports are reported as inbound, which represents the number of entrances or arrivals; and outbound, which represents the number of clearances or departures. On the waterways, the number of trips signifies the number of individual vessel movements on the waterway in each direction; a single trip is counted for each vessel using the waterway in a continuous direction regardless of the number of stops made on the waterway. The number of trips reported include vessels engaged in foreign trade, which are furnished by the Bureau of the Census based on Customs Entrance and Clearance forms. Complete information on trips of vessels, ferry and other, not required to clear formally was not furnished by the Bureau of Customs beginning with data for the year 1969.

Customs regulations with regard to entrance and clearance do not provide all data as required by the Corps of Engineers; where supplementary information could be obtained adjustments were made by the Corps of Engineers to reflect the true volume of vessel movements in and out of channels and harbors reported in these publications.

Excluded from these figures are United States Army and Navy vessels, such as Army transports and Navy tankers entering or clearing without commercial cargo, and foreign military and naval craft.

Some duplication may exist in the number of vessel trips at ports for those American flag vessels engaging in both foreign and domestic trade on the same voyage. Since movements of vessels and cargo between two United States ports are reported to the Corps of Engineers, and entrance and clearance must be obtained from Customs at each port of call while foreign cargoes are aboard, those vessels engaged in combined foreign and domestic movements may be reported twice.

Draft, in all cases, is the distance from water level to the lowest point of the vessel under water and is measured when the vessel is completely stopped - either tied to a dock or at anchor. The draft under way - while the vessel is moving - is dependent on many factors, such as speed of the vessel and depth and width of the channel, and varies from channel to channel. Channel depth of at least 3 feet more than the draft of a vessel at dock is required where vessels must be operated at slow speed. Channel depth of 5 feet more than the draft of a vessel at dock is required in channels where vessels can be operated at more efficient and economical speeds.

Included in the data on number of passengers arriving and departing by water on the various waterways and channels and at the ports are passengers engaged in foreign travel. Data on foreign passengers were obtained from the Immigration and Naturalization Service, Department of Justice, except for passengers between Canada and the United States in the Great Lakes and Alaska areas. In these areas, the Corps of Engineers was authorized to obtain the required information from sources available to the Corps.

Foreign data on various connecting channels having no terminal facilities, such as Cape Cod Canal, and Chesapeake and Delaware Canal are not available from Census records. Hence, the Corps of Engineers developed such data from canal records.

SECTION 1 of this publication presents comparative statements of commerce for preceding years and the detailed freight traffic for calendar year 1971 of harbors and waterways in the area covered by this part of the statistics series. SECTION 2 presents data on the movements of vessels at the harbors and on the waterways included in the first section.

TERMS FOR KIND OF TRAFFIC

The terms applied to the kinds of traffic as found in these publications are explained as follows:

PERTAINING TO PORTS

Imports and exports. - These terms apply to traffic between the United States and foreign ports, including the Canal Zone. Traffic of U.S. Great Lakes ports with Canada is supplemented by the term "Canadian" to differentiate it from overseas traffic.

Coastwise receipts and shipments. - These terms apply to domestic traffic receiving a carriage over the ocean, or the Gulf of Mexico, e.g., New Orleans to Baltimore, New York to Puerto Rico, San Francisco to Hawaii, or Puerto Rico to Hawaii. Traffic between Great Lakes ports and seacoast ports, when having a carriage over the ocean, is also termed "coastwise." The Chesapeake Bay and Puget Sound are internal bodies of water, therefore traffic confined to these areas is "internal" rather than "coastwise."

Lakewise receipts and shipments. - These terms apply to traffic between United States ports on the Great Lakes System. The Great Lakes System is treated as a separate system rather than as a part of the inland system.

Internal receipts and shipments. - These terms apply to traffic between ports or landings wherein the entire movement takes place on inland waterways. Also termed internal are movements involving carriage on both inland waterways and waters of the Great Lakes; inland movements that cross short stretches of open waters which link inland systems; marine products, sand and gravel taken directly from beds of the oceans, the Gulf of Mexico and important arms thereof; and movements between offshore installations and inland waterways.

Local. - Movements of freight within the confines of a port whether the port has only one or several arms or channels, except car-ferry and general ferry, are termed "local." The term is also applied to marine products, sand, and gravel taken directly from the Great Lakes.

Intraterritory receipts and shipments. - These terms apply to traffic between ports in Puerto Rico and the Virgin Islands, U.S.A., which are considered as a single unit.

PERTAINING TO RIVERS, FEDERAL AND PRIVATE CANALS, CONNECTING CHANNELS AND INTRACOASTAL WATERWAYS

The terms "imports," "exports," "coastwise receipts," "coastwise shipments," "internal receipts," and "internal shipments" are used as at ports.

Upbound and downbound. - These terms are applied to movements within the confines of a river, intracoastal waterway, canal, or a segment of one of these channels as described in the "Section included" for each channel.

Inbound and outbound. - Traffic moving from one waterway into another is termed "outbound" in the case of the shipping waterway and "inbound" with respect to the receiving waterway.

Through traffic. - Traffic moving through a waterway to and from points on other waterways is termed "through traffic."

GENERAL TERMS

Freight reported under the terms "car ferry" or "general ferry," is not directly included in the port or channel tonnage, but is separately stated and tabulated.

Commodity Classification for Shipping Statistics

Note: The commodity descriptions used in the statistical tables in this publication are abbreviated forms - to conserve printing space - of the following commodities.

Group 01 - Farm Products

Code No.	Item Name
0101	Cotton, raw
0102	Barley and rye
0103	Corn
0104	Oats

GOVERNMENT'S EXHIBIT 001

NEW YORK, N. Y., DISTRICT

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TRAFFIC AND DRAUGHTS OF VESSELS

DRAFT (FEET)		DIRECTION			DIRECTION			DIRECTION			DIRECTION		
		SELF-PROPELLED VESSELS		NON-Self-PROPELLED VESSELS		TOTAL		SELF-PROPELLED VESSELS		NON-Self-PROPELLED VESSELS		TOTAL	
		PASSENGER AND DRY CARGO	TANKER	T. TONNAGE OR TONNAGE	DRY CARGO	TANKER	TOTAL	PASSENGER AND DRY CARGO	TANKER	T. TONNAGE OR TONNAGE	DRY CARGO	TANKER	TOTAL
PARITAN RIVER TO ARTHUR KILL CUT OFF CHANNEL, N. J.													
25					UPSOUND		1				DOWNBOUND		2
24			1				1		2				
22						5	5						
21						21	21					37	37
20						15	15					25	25
19						2	2					20	20
18					3	25	28					25	25
17						4	4			1		6	7
16			1	20	31	9	61		2	14		18	37
15			12		16	48	76		35			43	78
14						77	109		8	22		30	60
13			21	198		65	304			198		213	413
12			25	1,942		103	2,070	1		1,916		117	2,037
11			32	84		49	165		2	84		43	129
10			25	667	337	66	1,095			658		37	655
9			29	50	146	26	251		42	49	3	65	159
8			32	121	62	13	248		28	121	84	11	244
7			1	70		3	74		32	69		34	115
6					6	1	7		14		11	2	27
5						114	114					59	59
4					5	114	119		10		74	97	181
3					16	333	349		3	3	366	276	648
2			2	1	69	90	162		1	1	147	30	179
TOTAL			187	3,179	711	1,204	5,281	1	184	3,136	685	1,188	5,194
NEW YORK HARBOR, N. Y. LOWER ENTRANCE CHANNELS													
48			1		INSOUND		1				OUTBOUND		
46			3				3						
45			5				5		2				2
44			2				2		1				1
43			6				6						
42			25				25						
41			26				26		1				1
40			68				68	1	1				2
39			184				184		2				2
38			181				181		1				1
37			195			2	197		6				6
36			378				378		5				5
35			282				286	8	29				37
34		4	317				332	6	25				31
33		15	235				251	24	52				76
32		56	228				284	25	83				108
31		115	260				375	113	41				154
30		181	160				341	162	72				254
29		249	97				346	261	47				308
28		320	81				401	325	94				419
27		353	71				424	395	77				472
26		458	65				523	436	131				594
25		495	53			1	549	450	183		26	1	616
24		472	58		5	1	536	435	371	1	2		807
23		481	39		10		530	379	209		1		589
22		542	31	1	4	9	587	466	445	2			618
21		545	88	5	7	645	645	346	3	2	25		641
20		422	32	1	2	17	474	460	296	1	1	26	784
19		345	13	2		24	384	336	126	3		19	484
18		1,522	2,690	1,946	439	1,622	7,619	1,294	2,319	1,949	421	1,631	7,614
TOTAL		6,591	5,224	1,955	450	1,693	15,913	6,081	4,945	1,959	455	1,706	15,148
HUDSON RIVER, N. Y., DEEPWATER IN UPPER BAY, N. Y. TO WATERFORD, N. Y. FOREIGN AND COASTWISE													
41			1		UPSOUND		1				DOWNBOUND		
40			6				6	1					1
38			2				2		1				1
37			1				1						
36			5				5						
35			2				3		1				1
34			4				7	2					2
33			7				10	15					15
32			24				43	8	2				10
31			55				101	65	1				66
30			51				71	95	3				98
29			31				131	104	2				106
28			37				109	53	2				59
27			17				104	115	8				123
26			8			1	132	133	17		30	1	151
25			10				146	129	8	1	4		142
24			3				102	77	18		4		99
23			2				101	37	14		3		54
22			2			6	80	55	21	2	1		78
21			76		1	84	69	106	3				178
20			3		3	75	71	34	1		1		168
19			50		8	60	40	35	2		2		79
18 AND LESS			89	29	824	2,579	3,624	160	67	774	2,520	120	3,641
TOTAL		1,192	269	830	2,579	128	4,958	1,229	340	783	2,565	122	9,639

TRIPS AND DRAFTS OF VESSELS

HARBOR OR WATERWAY			DIRECTION				DIRECTION				DIRECTION				DIRECTION			
DRAFT (FEET)	SELF-PROPELLED VESSELS			NON-SELF-PROPELLED VESSELS		TOTAL	SELF-PROPELLED VESSELS			NON-SELF-PROPELLED VESSELS		TOTAL	SELF-PROPELLED VESSELS			NON-SELF-PROPELLED VESSELS		TOTAL
	PASSENGERS AND FREIGHT	TANKER	TUGS AND BARGE	ENT. CARGO	TANKER		PASSENGERS AND FREIGHT	TANKER	TUGS AND BARGE	ENT. CARGO	TANKER		PASSENGERS AND FREIGHT	TANKER	TUGS AND BARGE	ENT. CARGO	TANKER	
HUDSON RIVER, N. Y., DEEPWATER IN UPPER BAY, N. Y. TO WATERFORD, N. Y. INTERNAL																		
				UPBOUND								DOWNBOUND						
35		1				1												
33		3				3												
32		5				5												
31		3				3												
30		16				16												
29		13				13												
28		10				10												
27		9			3	12												
26		9			2	11												
25		9			2	11												
24	1	1				2												
23		3		2		5												
22						8												
21						59												
20						35												
19		2				47												
18 AND LESS	7,832	974	31,985	20,957	3,995	65,343	10,603	952	31,245	21,546	4,039	68,385						
TOTAL	7,833	1,058	31,987	20,957	4,153	65,528	10,605	964	31,245	21,565	4,042	68,421						
HUDSON RIVER, N. Y., MOUTH OF SPUTEN DUYVIL CREEK (HARLEM RIVER) TO WATERFORD, N. Y.																		
				UPBOUND								DOWNBOUND						
41		1				1												
40		9				9												
39		1				1												
38		1				1												
37		5				5												
36		3				3												
35		4				4												
34		4				8												
33	2	6				37												
32	8	29				64												
31	7	57				77												
30	1	36				43												
29	4	44				48												
28	2	47			3	52												
27	2	25			2	29												
26	4	17			3	24												
25	30	19			2	51												
24	13	4				17												
23	4	4		2		23												
22	4	4			11	19												
21	15	3			57	75												
20	2	1			32	35												
19	2				55	59												
18	4	13			46	61												
17	1	16	121		56	194												
16	1	14	5	2	109	132												
15		19			307	326												
14	1	75	120	42	268	446												
13	54	154	950	17	546	1,721												
12 AND LESS	8	196	5,710	8,590	1,590	16,094	2,642	463	5,575	9,507	2,816	21,203						
TOTAL	176	801	6,908	8,651	3,036	19,572	3,018	778	6,776	9,626	2,852	23,634						
TARRYTOWN HARBOR, N. Y.																		
				INBOUND								OUTBOUND						
15			85			85												
13			259		9	268												
12			10		7	17												
11			112	422	30	564												
10			6		5	11												
9			2		1	3												
8																		
6 AND LESS																		
TOTAL			474	423	52	949												
ROCHESTER HARBOR, N. Y.																		
				INBOUND								OUTBOUND						
15						2												
14						3												
13						5												
12						8												
11						17												
10						9												
9						1												
8						48												
7						1												
6 AND LESS						1												
TOTAL			18	177	504	44												
PORT OF ALBANY, N. Y.																		
				INBOUND								OUTBOUND						
35						2												
32						3												
31						5												
30						8												
29						17												
28						9												
27						1												
26						48												
25						1												
24						1												
23						1												
22						1												
21						1												
20						1												
19						1												
18						1												
17						1												
16						1												
15						1												
14						1												
13						1												
12						1												
11						1												
10						1												
9						1												
8						1												
7						1												
6						1												
5						1												
4						1												
3						1												
2						1												
1						1												
0						1												
TOTAL						1												

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GOVERNMENT'S EXHIBIT 0

WATERBORNE COMMERCE
OF THE UNITED STATES

CALENDAR YEAR 1972

PART 1
WATERWAYS AND HARBORS
ATLANTIC COAST



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

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GOVERNMENT'S EXHIBIT 002

WATERBORNE COMMERCE
OF THE UNITED STATES

CALENDAR YEAR 1972

PART 1

WATERWAYS AND HARBORS
ATLANTIC COAST

COMPILED UNDER THE SUPERVISION OF
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GOVERNMENT'S EXHIBIT 002

INTRODUCTION

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- Part 1 Atlantic Coast
- Part 2 Gulf Coast, Mississippi River System, and Antilles
- Part 3 Great Lakes
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- Part 5 Waterborne Commerce of the United States (National Summaries)

Both the foreign and domestic commerce of the United States by water are included. Data on the foreign commerce were supplied to the Corps of Engineers by the Bureau of the Census; data for the compilation of the domestic statistics were collected by the several offices of the Corps of Engineers, Department of the Army, in compliance with various acts of Congress. The principal provision governing the collection of these data is included in the River and Harbor Act of September 22, 1922:

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While the information as now collected and compiled is designed to meet the administrative requirements of the Department of the Army in connection with the duties assigned by Congress, it also provides useful data for other governmental departments, commercial and shipping concerns, and others interested in transportation.

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Sponsored by the Office of Statistical Policy, Office of Management and Budget, a uniform system of classification for freight was developed with cooperation of all federal agencies engaged in

collecting and compiling data on shipping. This classification, the Commodity Classification for Shipping Statistics, is used for data on the foreign and domestic commerce presented in these publications, although some minor modifications exist in the foreign data which were necessitated by Bureau of the Census policies and procedures.

The domestic traffic includes all commercial movements between points in the United States, Puerto Rico, and the Virgin Islands. Traffic with the Panama Canal Zone is treated as foreign commerce. Cargo moved for the military agencies in commercial vessels is reported as ordinary commercial cargo; military cargo moved in Department of Defense vessels is omitted from these statistics.

All movements between the United States and foreign countries and between Puerto Rico and Virgin Islands, U.S.A., and foreign countries are classified as foreign traffic. Trade between United States territories and possessions, i.e., Guam, Wake, American Samoa, etc., and foreign countries is excluded.

These data are furnished to the Corps of Engineers by the Bureau of the Census under a working arrangement sponsored by the Office of Statistical Policy, Office of Management and Budget. The data are confined to movements by water, and are reconcilable with published reports of the Bureau of the Census. Shipments of domestic merchandise and re-exports of foreign merchandise are termed exports. The imports include inbound merchandise for direct consumption and entries into custom bonded storage and manufacturing warehouses. Intransit merchandise, defined by the Bureau of the Census as merchandise coming into the United States from a foreign country and shipped to a foreign country without having been entered as an import, is treated as an import when unloaded from a vessel and as an export when loaded on a vessel. Export shipments for use of the United States Armed Forces abroad are excluded from the statistics as are import shipments on Department of Defense owned and operated vessels. Foreign trade data of territories and possessions other than Puerto Rico and the Virgin Islands, which are under the jurisdiction of the Department of the Interior, were not furnished to the Corps of Engineers by the Bureau of the Census and are excluded from the statistics of both agencies.

Export shipments under the various foreign aid programs on Department of Defense operated vessels, either American flag commercial vessels under time, voyage, or space charter or vessels owned and operated by the Department of Defense, and various items (listed by the Census) which affect national security are not published in terms of the individual commodities shipped. Instead, a lump-sum tonnage figure is compiled and appears in these tables as commodity code 9999, "Department of Defense controlled cargo and Special Category Items."

The 1972 statistics on waterborne exports of domestic and foreign merchandise and non-Department of Defense shipments of Special Category commodities reflect fully compiled data for shipments to Canada individually valued at \$2,000 and over combined with estimated data for shipments valued \$251-\$1,999, based on a 10-percent sample of such shipments. For countries other than Canada, the export statistics reflect fully compiled data for shipments valued \$500 and over combined with estimated data for shipments valued \$251 - \$499, based on a 50-percent sample of such shipments. Data on export shipments valued under \$251 are excluded from this report.

Import statistics for 1972 exclude data on shipments valued \$250 and under reported on both formal and informal entries. Informal entries generally contain items valued not more than \$250.

Foreign trade data furnished by Census are based on reports processed for Census' monthly data January through December and represent statistical year rather than calendar year data.

The figures on ton-miles are computed by the Corps of Engineers; each ton-mile figure reflects only the distance each ton of cargo, foreign or domestic, moved on the waterway de-

GOVERNMENT'S EXHIBIT 002

WATERBORNE COMMERCE OF THE UNITED STATES, 1972

scribed in the section for which the figure is reported. The summary of ton-miles for the entire United States contained in Part 5 includes movements on the inland waterways and Great Lakes system only; cargoes, foreign and domestic, of deep-sea vessels are included only for that portion of the voyage that occurred in inland rivers, canals, or connecting channels - neither the carriage on the oceans and the Gulf of Mexico nor the tonnage moved among the territories and possessions, "Intraterritory Traffic," are taken into account.

Trips of vessels at ports are reported as inbound, which represents the number of entrances or arrivals; and outbound, which represents the number of clearances or departures. On the waterways, the number of trips signifies the number of individual vessel movements on the waterway in each direction; a single trip is counted for each vessel using the waterway in a continuous direction regardless of the number of stops made on the waterway. The number of trips reported include vessels engaged in foreign trade, which are furnished by the Bureau of the Census based on Customs Entrance and Clearance forms. Complete information on trips of vessels, ferry and other, not required to clear formally was not furnished by the Bureau of Customs beginning with data for the year 1969.

Customs regulations with regard to entrance and clearance do not provide all data as required by the Corps of Engineers; where supplementary information could be obtained adjustments were made by the Corps of Engineers to reflect the true volume of vessel movements in and out of channels and harbors reported in these publications.

Excluded from these figures are United States Army and Navy vessels, such as Army transports and Navy tankers entering or clearing without commercial cargo, and foreign military and naval craft.

Some duplication may exist in the number of vessel trips at ports for those American flag vessels engaging in both foreign and domestic trade on the same voyage. Since movements of vessels and cargo between two United States ports are reported to the Corps of Engineers, and entrance and clearance must be obtained from Customs at each port of call while foreign cargoes are aboard, those vessels engaged in combined foreign and domestic movements may be reported twice.

Draft, in all cases, is the distance from water level to the lowest point of the vessel under water and is measured when the vessel is completely stopped - either tied to a dock or at anchor. The draft under way - while the vessel is moving - is dependent on many factors, such as speed of the vessel and depth and width of the channel, and varies from channel to channel. Channel depth of at least 3 feet more than the draft of a vessel at dock is required where vessels must be operated at slow speed. Channel depth of 5 feet more than the draft of a vessel at dock is required in channels where vessels can be operated at more efficient and economical speeds.

Included in the data on number of passengers arriving and departing by water on the various waterways and channels and at the ports are passengers engaged in foreign travel. Data on foreign passengers were obtained from the Immigration and Naturalization Service, Department of Justice, except for passengers between Canada and the United States in the Great Lakes and Alaska areas. In these areas, the Corps of Engineers was authorized to obtain the required information from sources available to the Corps.

Foreign data on various connecting channels having no terminal facilities, such as Cape Cod Canal, and Chesapeake and Delaware Canal, are not available from Census records. Hence, the Corps of Engineers developed such data from canal records.

SECTION 1 of this publication presents comparative statements of commerce for preceding years and the detailed freight traffic for calendar year 1972 at harbors and waterways in the area covered by this part of the statistics series. SECTION 2 presents data on the movements of vessels at the harbors and on the waterways included in the first section.

TERMS FOR KIND OF TRAFFIC

The terms applied to the kinds of traffic as found in these publications are explained as follows:

PERTAINING TO PORTS

Imports and exports. - These terms apply to traffic between the United States and foreign ports, including the Canal Zone. Traffic of U.S. Great Lakes ports with Canada is supplemented by the term "Canadian" to differentiate it from overseas traffic.

Coastwise receipts and shipments. - These terms apply to domestic traffic receiving a carriage over the ocean, or the Gulf of Mexico, e.g., New Orleans to Baltimore, New York to Puerto Rico, San Francisco to Hawaii, or Puerto Rico to Hawaii. Traffic between Great Lakes ports and seacoast ports, when having a carriage over the ocean, is also termed "coastwise." The Chesapeake Bay and Puget Sound are internal bodies of water, therefore traffic confined to these areas is "internal" rather than "coastwise."

Lakewise receipts and shipments. - These terms apply to traffic between United States ports on the Great Lakes System. The Great Lakes System is treated as a separate system rather than as a part of the inland system.

Internal receipts and shipments. - These terms apply to traffic between ports or landings wherein the entire movement takes place on inland waterways. Also termed internal are movements involving carriage on both inland waterways and waters of the Great Lakes; inland movements that cross short stretches of open waters which link inland systems; marine products, sand and gravel taken directly from beds of the oceans, the Gulf of Mexico and important arms thereof; and movements between offshore installations and inland waterways.

Local. - Movements of freight within the confines of a port whether the port has only one or several arms or channels, except car-ferry and general ferry, are termed "local." The term is also applied to marine products, sand, and gravel taken directly from the Great Lakes.

Intraterritory receipts and shipments. - These terms apply to traffic between ports in Puerto Rico and the Virgin Islands, U.S.A., which are considered as a single unit.

PERTAINING TO RIVERS, FEDERAL AND PRIVATE CANALS, CONNECTING CHANNELS, AND INTRACOASTAL WATERWAYS

The terms "imports," "exports," "coastwise receipts," "coastwise shipments," "internal receipts," and "internal shipments" are used as at ports.

Upbound and downbound. - These terms are applied to movements within the confines of a river, intracoastal waterway, canal, or a segment of one of these channels as described in the "Section included" for each channel.

Inbound and outbound. - Traffic moving from one waterway into another is termed "outbound" in the case of the shipping waterway and "inbound" with respect to the receiving waterway.

Through traffic. - Traffic moving through a waterway to and from points on other waterways is termed "through traffic."

GENERAL TERMS

Freight reported under the terms "car ferry" or "general ferry," is not directly included in the port or channel tonnage, but is separately stated and tabulated.

Commodity Classification for Shipping Statistics

Note: The commodity descriptions used in the statistical tables in this publication are abbreviated forms - to conserve printing space - of the following commodities.

Group 01 - Farm Products

Code No.	Item Name
0101	Cotton, raw
0102	Barley and rye
0103	Corn
0104	Oats

GOVERNMENT'S EXHIBIT 002
WATERBORNE COMMERCE OF THE UNITED STATES, 1972
NEW YORK, N. Y., DISTRICT

TRIPS AND DRAUGHTS OF VESSELS

HARBOR OR WATERWAY	DIRECTION						DIRECTION						
	DRAFT (FEET)	SELF PROPELLED VESSEL			NON SELF PROPELLED VESSEL		TOTAL	SELF PROPELLED VESSEL			NON SELF PROPELLED VESSEL		TOTAL
		PASSENGER AND DRY CARGO	TANKER	TUGBOAT OR TUGBOAT	DRY CARGO	TANKER		PASSENGER AND DRY CARGO	TANKER	TUGBOAT OR TUGBOAT	DRY CARGO	TANKER	
HARITAN RIVER TO ARTHUR KILL CUT OFF CHANNEL, N. J.--(CONTINUED)													
4		1	3	UPBOUND						DOWNBOUND			
3		4	3	7	119	123		5		69	128	202	
2				80	284	298		1		978	214	1,193	
					101	181				118	37	155	
TOTAL		108	3,381	1,262	1,138	5,869		98	3,357	1,261	1,131	5,849	
NEW YORK HARBOR, N. Y. LOWER ENTRANCE CHANNELS													
45		4		INBOUND						OUTBOUND			
44		12				12		1				1	
43		18				18							
42		40				40		2				2	
41		59				59		4				4	
40		86				86		4				4	
39	3	170			1	174		3				3	
38		181			1	182		5				5	
37	2	235	1		2	240	2	8				8	
36	1	348			2	351	5	9				14	
35	8	231			1	240	9	23				32	
34	23	292			1	316	12	17				29	
33	29	195				224	23	12				35	
32	72	212			1	285	54	56				110	
31	154	242				396	140	59				199	
30	225	172	1			398	153	66	1			220	
29	231	93				324	253	59			1	313	
28	327	101				428	334	127	1		2	464	
27	375	64				439	424	95			1	524	
26	444	69	7		1	521	436	240	4	31	2	713	
25	515	67				572	514	238		13	1	766	
24	610	59		2	2	713	513	410	1		3	927	
23	597	57			8	572	460	218			1	679	
22	523	35		5	7	570	508	404		2	5	919	
21	517	119			4	630	462	394	2	3	16	877	
20	415	42	1		11	479	467	231		1	6	705	
19	379	13		1	12	405	375	95			8	478	
18	1,712	2,261	2,641	313	1,641	8,568	1,407	2,424	2,639	273	1,699	8,441	
TOTAL	7,112	5,477	2,651	321	1,655	17,246	6,551	5,204	2,648	324	1,743	16,470	
HUDSON RIVER, N. Y., DEEPWATER IN UPPER BAY, N. Y. TO WATERFORD, N. Y. FOREIGN AND COASTWISE													
41		1		UPBOUND						DOWNBOUND			
40		1				1							
38		2				2							
37	1	2				3							
36		12				12							
35	7	4				11	2					1	
34	10	6				16	3					2	
33	17	5				22	14					3	
32	25	25				50	26					14	
31	54	53				107	82	7				27	
30	57	29				86	67	2				89	
29	67	19				86	94					69	
28	88	31				119	80	3				94	
27	103	13				116	119	2				83	
26	92	16				108	82	8	1	40	1	121	
25	139	6				145	141	13		16		132	
24	136	8				144	101	21				177	
23	55	7			2	64	79	16		1		122	
22	60	4		3	5	72	63	33		2		96	
21	66	10				76	46	142		1		118	
20	55	7				63	59	23				189	
19	66				1	71	54	8		2		82	
18 AND LESS	346	66	1,071	2,342	109	3,934	344	72	992	2,438	119	64	
TOTAL	1,444	327	1,071	2,345	122	5,309	1,477	351	993	2,500	120	3,969	
HUDSON RIVER, N. Y., DEEPWATER IN UPPER BAY, N. Y. TO WATERFORD, N. Y. INTERNAL													
39		1		UPBOUND						DOWNBOUND			
32		3				3							
31		4			1	5							
30		5				5							
29		5			1	6		1				1	
28	13	7				13							
27	7			26	1	34		2				2	
26	6					6				2		2	
25	8					8						2	
24	2				2	4		4				4	
23	4					4		1				1	
22	4				27	31		3				3	
21	3					92		1			1	9	
20	2					58		1				1	
19	1					34		1				1	
18 AND LESS	4,257	883	27,679	15,536	3,854	52,159	6,309	881	26,938	15,802	3,988	53,918	
TOTAL	4,237	951	27,681	15,542	3,858	52,159	6,309	881	26,938	15,802	3,988	53,918	

GOVERNMENT'S EXHIBIT 003.

WATERBORNE COMMERCE
OF THE UNITED STATES

CALENDAR YEAR 1973

PART 1
WATERWAYS AND HARBORS
ATLANTIC COAST



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

GOVERNMENT'S EXHIBIT 003

WATERBORNE COMMERCE
OF THE UNITED STATES

CALENDAR YEAR 1973

PART 1
WATERWAYS AND HARBORS
ATLANTIC COAST

COMPILED UNDER THE SUPERVISION OF
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Sponsored by the Office of Statistical Policy, Office of Management and Budget, a uniform system of classification for freight was developed with cooperation of all Federal agencies engaged in collecting and compiling data on shipping. This classification, the Commodity Classification for Shipping Statistics, is used for data on the foreign and domestic commerce presented in these publications, although some minor modifications exist in the foreign data which were necessitated by Bureau of the Census policies and procedures.

The domestic traffic includes all commercial movements between points in the United States, Puerto Rico, and the Virgin Islands. Traffic with the Panama Canal Zone is treated as foreign commerce. Cargo moved for the military agencies in commercial vessels is reported as ordinary commercial cargo; military cargo moved in Department of Defense vessels is omitted from these statistics.

All movements between the United States and foreign countries and between Puerto Rico and Virgin Islands, U. S. A., and foreign countries are classified as foreign traffic. Trade between United States territories and possessions, i.e. Guam, Wake, American Samoa, etc., and foreign countries is excluded.

These data are furnished to the Corps of Engineers by the Bureau of the Census under a working arrangement sponsored by the Office of Statistical Policy, Office of Management and Budget. The data are confined to movements by water, and are reconcilable with published reports of the Bureau of the Census. Shipments of domestic merchandise and re-exports of foreign merchandise are termed exports. The imports include inbound merchandise for direct consumption and entries into custom bonded storage and manufacturing warehouses. Intransit merchandise, defined by the Bureau of the Census as merchandise coming into the United States from a foreign country and shipped to a foreign country without having been entered as an import, is treated as an import when

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WATERBORNE COMMERCE OF THE UNITED STATES, 1973

unloaded from a vessel and as an export when loaded on a vessel. Export shipments for use of the United States Armed Forces abroad are excluded from the statistics as are import shipments on Department of Defense owned and operated vessels. Foreign trade data of territories and possessions other than Puerto Rico and the Virgin Islands, which are under the jurisdiction of the Department of the Interior, were not furnished to the Corps of Engineers by the Bureau of the Census and are excluded from the statistics of both agencies.

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TERMS FOR KIND OF TRAFFIC

The terms applied to the kinds of traffic as found in these publications are explained as follows:

Pertaining to Ports

Imports and exports.—These terms apply to traffic between the United States and foreign ports, including the Canal Zone. Traffic of U. S. Great Lakes ports with Canada is supplemented by the term "Canadian" to differentiate it from overseas traffic.

Coastwise receipts and shipments.—These terms apply to domestic traffic receiving a carriage over the ocean, or the Gulf of Mexico, e.g., New Orleans to Baltimore, New York to Puerto Rico, San Francisco to Hawaii, or Puerto Rico to Hawaii. Traffic between Great Lakes ports and seacoast ports, when having a carriage over the ocean, is also termed "coastwise." The Chesapeake Bay and Puget Sound are internal bodies of water; therefore, traffic confined to these areas is "internal" rather than "coastwise."

Lakewise receipts and shipments.—These terms apply to traffic between United States ports on the Great Lakes System. The Great Lakes System is treated as a separate system rather than as a part of the inland system.

Internal receipts and shipments.—These terms apply to traffic between ports or landings

wherein the entire movement takes place on inland waterways. Also termed internal are movements involving carriage on both inland waterways and waters of the Great Lakes; inland movements that cross short stretches of open waters which link inland systems; marine products, sand and gravel taken directly from beds of the oceans, the Gulf of Mexico and important arms thereof; and movements between offshore installations and inland waterways.

Local.—Movements of freight within the confines of a port whether the port has only one or several arms or channels, except car-ferry and general ferry, are termed "local." The term is also applied to marine products, sand, and gravel taken directly from the Great Lakes.

Intraterritory receipts and shipments.—These terms apply to traffic between ports in Puerto Rico and the Virgin Islands, U. S. A., which are considered as a single unit.

Pertaining to Rivers, Federal and Private Canals, Connecting Channels, and Intracoastal Waterways

The terms "imports," "exports," "coastwise receipts," "coastwise shipments," "internal receipts," and "internal shipments" are used as at ports.

Upbound and downbound.—These terms are applied to movements within the confines of a river, intracoastal waterway, canal, or a segment of one of these channels as described in the "Section included" for each channel.

Inbound and outbound.—Traffic moving from one waterway into another is termed "outbound" in the case of the shipping waterway and "inbound" with respect to the receiving waterway.

Through traffic.—Traffic moving through a waterway to and from points on other waterways is termed "through traffic."

General Terms

Freight reported under the terms "car ferry" or "general ferry" is not directly included in the port or channel tonnage, but is separately stated and tabulated.

COMMODITY CLASSIFICATION FOR SHIPPING STATISTICS

Note: The commodity descriptions used in the statistical tables in this publication are abbreviated forms to conserve printing space--of the following commodities.

Code No.	Item Name
Group 01—Farm Products	
0101	Cotton, raw
0102	Barley and rye
0103	Corn
0104	Oats

Code No.	Item Name
Group 01 Continued	
0105	Rice
0106	Sorghum grains
0107	Wheat
0111	Soybeans
0112	Flaxseed
0119	Oilseeds, not elsewhere classified
0121	Tobacco, leaf
0122	Hay and fodder

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WATERBORNE COMMERCE OF THE UNITED STATES, 1973
NEW YORK, N. Y., DISTRICT

TRIPS AND DRAITS OF VESSELS

HARBOR OR WATERWAY	DIRECTION					DIRECTION				
	SELF PROPELLED VESSELS			NON SELF PROPELLED VESSELS		SELF PROPELLED VESSELS			NON SELF PROPELLED VESSELS	
DRAFT (FEET)	PASSENGER AND DRY CARGO	TANKER	TUGBOAT OR TUGBOAT	DRY CARGO	TANKER	PASSENGER AND DRY CARGO	TANKER	TUGBOAT OR TUGBOAT	DRY CARGO	TANKER
HARITAN RIVER TO ARTHUR KILL CUT OFF CHANNEL, N. J. (CONTINUED)										
				UPBOUND					DOWNBOUND	
7		4	57		4		31	59		6
6	1	1		41	1		5		2	3
5					28		1		1	29
4		6		42	164		3		80	170
3	1	2	4	116	360		1	4	979	159
2				134	117		1		18	71
TOTAL	2	118	3,463	1,570	1,098	6,051	1	112	3,434	1,369
NEW YORK HARBOR, N. Y. LOWER ENTRANCE CHANNELS										
				INBOUND					OUTBOUND	
46	1	2				4	1			5
45		7								
44		27				2				2
43		48				1	2			3
42		77				1	2			3
41		68								
40		85						3		3
39		158				1	3			4
38	2	229				2	5			7
37	8	290			3	2	9			11
36	6	348			7	3	14			17
35	15	253			2	21	22			43
34	45	330			1	376	41	36		77
33	72	245				317	64	43		107
32	111	195				366	90	39	2	131
31	182	248			2	432	178	66		244
30	246	183				429	182	86		268
29	367	86			4	457	316	48		364
28	367	79				446	394	106		500
27	362	69	5		2	438	430	93	13	538
26	464	56	7		3	530	447	327	5	813
25	531	44	1		1	577	530	255	7	796
24	560	67			1	648	487	455		943
23	500	50	1		5	556	425	297	1	724
22	532	45	1		8	586	451	377	3	846
21	442	150		1	3	596	398	313	6	735
20	342	41		2	17	402	259	239		624
19	247	16	1	1	17	282	334	63	3	413
18	901	2,252	2,602	504	1,624	7,863	1,093	2,449	2,601	453
TOTAL	6,323	5,748	2,618	508	1,700	16,297	6,256	5,373	2,619	503
HUDSON RIVER, N. Y., DEEPWATER IN UPPER BAY, N. Y. TO WATERFORD, N. Y. FOREIGN AND COASTWISE										
				UPBOUND					DOWNBOUND	
43		1					1			1
38	1									
37	5	4				1				1
36										
35	11					11	9			9
34	22	3				25	15	1		16
33	29	3				32	29	1		30
32	44	20				64	35	1		36
31	67	43				110	111	5		116
30	69	27				96	90	1		91
29	61	16				77	96	1		97
28	95	23				118	48	3		52
27	90	14				104	88	3		115
26	96	7			1	104	109	9	1	148
25	144	2				146	174	5		188
24	101	13				114	83	15		98
23	62	7			4	73	37	22	1	61
22	63	4	1		2	70	58	23	1	82
21	66	14				80	56	118		174
20	61	4			3	68	52	14		66
19	33	2			3	39	70	3		73
18 AND LESS	231	53	994	2,606	130	4,014	279	71	865	137
TOTAL	1,351	260	995	2,607	143	5,356	1,440	297	868	139
HUDSON RIVER, N. Y., DEEPWATER IN UPPER BAY, N. Y. TO WATERFORD, N. Y. INTERNAL										
				UPBOUND					DOWNBOUND	
34		1				1				
33					2	2				
32					1	1				
31		3				3				
30	1	3				4				1
29		1				1		1		
28		3				3				
27		3				71				
26		13	1	65	3	4	1		2	2
25		1			4	18				1
24	2	1			6	9	1			1
23		2	1		1	4	1			2
22		3			2	5				1
21		1	1		44	46	1			1
20		3		1	85	89	1			8
19		3			56	59	1			3
18		3			51	54				4

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TRIPS AND DRAFTS OF VESSELS

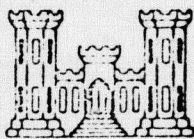
HARBOR OR WATERWAY	DIRECTION					DIRECTION					TOTAL	
	SELF PROPELLED VESSELS			NON SELF PROPELLED VESSELS		SELF PROPELLED VESSELS			NON SELF PROPELLED VESSELS			
	PASSENGER AND DRY CARGO	TANKER	TUGBOAT OR TUGBOAT	DRY CARGO	TANKER	PASSENGER AND DRY CARGO	TANKER	TUGBOAT OR TUGBOAT	DRY CARGO	TANKER		
DRAFT (FEET)												
HUDSON RIVER, N. Y., DEEPWATER IN UPPER BAY, N. Y. TO WATERFORD, N. Y. INTERVAL--(CONTINUED)												
10 AND LESS--	4,125	1,042	29,376	13,785	7,687	56,015	6,095	993	28,419	13,810	7,793	57,116
TOTAL--	4,128	1,085	29,379	13,851	7,942	56,385	6,095	1,000	28,419	13,812	7,810	57,136
HUDSON RIVER, N. Y., MOUTH OF SPUTEN DUTVIL CREEK (HARLEM RIVER) TO WATERFORD, N. Y.												
36--	2	12				14						1
35--	1					1						1
34--		2				2		1				1
33--	4	3			2	9						1
32--	9	19			1	29	1	5				29
31--	6	46				52	24	1				8
30--	6	30				36	7	1				8
29--	9	16				25	7	1				5
28--	3	24				29	1	3			1	32
27--	3	16			3	22	4	4				49
26--	6	19		1	5	31	7	8	1	24	2	18
25--	31	2			6	39	5	4		31	1	29
24--	31	14	1		1	47	15	14		8		28
23--	30	8			6	44	6	18	1	1	2	42
22--	14	5	1		41	61	21	21			6	146
21--	18	14		1	67	100	23	117			2	39
20--	17	4			45	66	25	12			4	32
19--	15	3		1	47	66	27	1			3	56
18--	5	26			117	148	22	3		30	3	162
17--	4	57	116		74	251	21	8	116	15	2	105
16--	3	70	20		137	230	19	11	21	49	5	43
15--	3	22	25		342	392	5	1	25	8	4	236
14--	13	77	206	54	243	593	13	1	205	10	7	1,219
13--	1	159	1,204	8	666	2,036	2	14	1,189	5	9	23,266
12 AND LESS--	320	271	6,710	9,568	4,569	21,658	2,518	619	5,918	9,412	4,899	25,657
TOTAL--	554	921	8,284	9,630	6,792	26,181	2,773	868	7,476	9,593	4,947	25,657
TARRYTOWN HARBOR, N. Y.												
14--			1			1				1		1
13--			25			25				26		26
12--			97		10	107				94		94
11--			178		11	189				177		177
10--			387		17	475				71		71
9--			19		12	31				19		19
8--			32	77	2	111				32		32
7--			1			1				4		1
6 AND LESS--					1	1				460	53	517
TOTAL--			424	464	53	941				425	460	938
ROCKY HARBOR, N. Y.												
15--			2			2						2
14--			27		1	3				2		27
13--			7		30	57				7		7
12--			2		5	12				2		4
11--		18	2		2	22				2	2	774
10--		10	31	1	2	44				29		22
9--			21		1	22				72		19
8--		2	16		2	20		3		16		37
7--			10		4	14		27		10		70
6 AND LESS--				765	3	768				2	20	48
TOTAL--		30	116	766	52	964		30	117	765	50	962
PORT OF ALBANY, N. Y.												
32--	1	18				20						29
31--		43				43	24	5				6
30--	1	26				27	5	1				5
29--	1	19				16	4	1				2
28--	1	16				17	1				1	5
27--	3	14			2	19	3	2				10
26--	5	17	1		2	25	6	3	1			4
25--	6	2			5	13	1	2			1	20
24--	26	12	1		1	40	11	9				14
23--	30	7			5	42	4	9	1			30
22--	13	3			26	42	12	10				110
21--	15	10		1	32	58	15	103				34
20--	16	4			25	45	22	11			1	29
19--	15	3			25	43	25	3			3	14
18--	5	22			34	61	11	3				68
17--	4	50	54		42	150	5	7	55		1	23
16--	3	13	8		16	144	4	8	8			29
15--	3	10	10		246	279	2		18			77
14--	1	31	68		97	196	1	1	70		5	179
13--	1	24	153	5	182	362	1	2	147		23	4,929
12 AND LESS--	9	101	2,234	5	1,617	3,962	291	2,231	5	2,398		5,611
TOTAL--	154	481	2,539	6	2,424	5,604	197	477	2,531	5	2,441	5,611

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WATERBORNE COMMERCE
OF THE UNITED STATES

CALENDAR YEAR 1974

PART 1
WATERWAYS AND HARBORS
ATLANTIC COAST



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

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WATERBORNE COMMERCE
OF THE UNITED STATES

CALENDAR YEAR 1974

PART 1
WATERWAYS AND HARBORS
ATLANTIC COAST

COMPILED UNDER THE SUPERVISION OF
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WATERBORNE COMMERCE OF THE UNITED STATES, 1974

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The terms applied to the kinds of traffic as found in these publications are explained as follows:

Pertaining to Ports

Imports and exports.—These terms apply to traffic between the United States and foreign ports, including the Canal Zone. Traffic of U. S. Great Lakes ports with Canada is supplemented by the term "Canadian" to differentiate it from overseas traffic.

Coastwise receipts and shipments.—These terms apply to domestic traffic receiving a carriage over the ocean, or the Gulf of Mexico, e.g., New Orleans to Baltimore, New York to Puerto Rico, San Francisco to Hawaii, or Puerto Rico to Hawaii. Traffic between Great Lakes ports and seacoast ports, when having a carriage over the ocean, is also termed "coastwise." The Chesapeake Bay and Puget Sound are internal bodies of water; therefore, traffic confined to these areas is "internal" rather than "coastwise."

Lakewise receipts and shipments.—These terms apply to traffic between United States ports on the Great Lakes System. The Great Lakes System is treated as a separate system rather than as a part of the inland system.

Internal receipts and shipments.—These terms apply to traffic between ports or landings

wherein the entire movement takes place on inland waterways. Also termed "internal" are movements involving carriage on both inland waterways and waters of the Great Lakes; inland movements that cross short stretches of open waters which link inland systems; marine products, sand and gravel taken directly from beds of the oceans, the Gulf of Mexico and important arms thereof; and movements between offshore installations and inland waterways.

Local.—Movements of freight within the confines of a port whether the port has only one or several arms or channels, except car-ferry and general ferry, are termed "local." The term is also applied to marine products, sand, and gravel taken directly from the Great Lakes.

Intraterritory receipts and shipments.—These terms apply to traffic between ports in Puerto Rico and the Virgin Islands, U. S. A., which are considered as a single unit.

Pertaining to Rivers, Federal and Private Canals, Connecting Channels, and Intracoastal Waterways

The terms "imports," "exports," "coastwise receipts," "coastwise shipments," "internal receipts," and "internal shipments" are used as at ports.

Upbound and downbound.—These terms are applied to movements within the confines of a river, intracoastal waterway, canal, or a segment of one of these channels as described in the "Section included" for each channel.

Inbound and outbound.—Traffic moving from one waterway into another is termed "outbound" in the case of the shipping waterway and "inbound" with respect to the receiving waterway.

Through traffic.—Traffic moving through a waterway to and from points on other waterways is termed "through traffic."

General Terms

Freight reported under the terms "car ferry" or "general ferry" is not directly included in the port or channel tonnage, but is separately stated and tabulated.

COMMODITY CLASSIFICATION FOR SHIPPING STATISTICS

Note: The commodity descriptions used in the statistical tables in this publication are abbreviated forms—to conserve printing space—of the following commodities.

Code No.	Item Name	Code No.	Item Name
Group 01—Farm Products		Group 01—Continued	
0101	Cotton, raw	0105	Rice
0102	Barley and rye	0106	Sorghum grains
0103	Corn	0107	Wheat
0104	Oats	0111	Soybeans
		0112	Flaxseed
		0119	Oilseeds, not elsewhere classified
		0121	Tobacco, leaf
		0122	Hay and fodder

GOVERNMENT'S EXHIBIT 004

168

WATERBORNE COMMERCE OF THE UNITED STATES, 1974

NEW YORK, N. Y., DISTRICT

TRIPS AND DRAITS OF VESSELS

PORT OR WATERWAY	DRAFT (FEET)	DIRECTION					DIRECTION				
		SELF-PROPELLED VESSELS			NON-SELF-PROPELLED VESSELS		SELF-PROPELLED VESSELS			NON-SELF-PROPELLED VESSELS	
		PASSENGER AND DRY CARGO	TANKER	TOWBOAT OR TUGBOAT	DRY CARGO	TOTAL	PASSENGER AND DRY CARGO	TANKER	TOWBOAT	DRY CARGO	TOTAL
RARITAN RIVER TO ARTHUR KILL CUT OFF CHANNEL, N. J. (CONTINUED)											
					UPBOUND					DOWNBOUND	
19					6	6				11	11
18					18	18				32	32
17				2	11	13			2	14	16
16			1	3	43	47			3	28	31
15				8	28	36		1	10	57	68
14			5	68	52	125		10	66	46	122
13			16	438	57	511		2	432	271	705
12		5	31	1,494	59	1,589	5	14	1,512	113	1,644
11			9	111	23	143		3	114	44	161
10			8	801	20	1,654		1	795	58	975
9			4	123	17	159		22	118	7	20
8			11	98	5	120		13	99	128	265
7			4	50	5	59		18	47	2	67
6			1	19	53	79		2	19	2	76
5					7	7		2		39	43
4			9		196	205		1		5	116
3			2		49	401		1	1	927	1,081
2				1	87	102				48	72
TOTAL		5	101	3,216	1,236	5,633	5	93	3,218	1,240	5,645
NEW YORK HARBOR, N. Y. LOWER ENTRANCE CHANNELS											
					INBOUND					OUTBOUND	
45			31		31	31				1	1
44			25		25	25		1		1	1
43			19		69	69		1		1	1
42			60		60	60		1		2	2
41			50		50	50		2		7	7
40			64		64	64		7		5	5
39			129		129	129	1			1	1
38		3	237		243	243	3	11		1	15
37		3	282		287	287	3	12		1	16
36		9	258		267	267	12	13			25
35		17	241		259	259	13	22			35
34		49	301		351	351	55	33			88
33		64	222		286	286	75	63			138
32		120	170		290	290	103	48			152
31		207	175		383	383	167	48		1	215
30		253	135		389	389	237	69			358
29		361	59	1	423	423	329	64			393
28		369	64	2	437	437	406	118			524
27		362	73	1	437	437	473	84		26	563
26		458	69	4	534	534	461	301		10	776
25		516	70		588	588	465	158		9	672
24		517	47		565	565	437	397	1	1	876
23		462	39		507	507	329	317	1		650
22		435	43		488	488	392	308			700
21		343	140	1	491	491	320	202	2	34	548
20		251	25		285	285	318	194	2	9	524
19		196	12	3	239	239	322	84	2	10	418
18		814	2,042	1,847	451	6,613	900	2,794	1,851	427	6,924
TOTAL		5,829	5,132	1,859	463	14,610	5,821	4,857	1,859	475	14,535
HUDSON RIVER, N. Y., DEEPWATER IN UPPER BAY, N. Y. TO WATERFORD, N. Y. FOREIGN AND COASTWISE											
					UPBOUND					DOWNBOUND	
39			2		2	2	1				1
38			4		4	4					
37			5		5	5		1			1
36			6		6	6		4			4
35		12	5		17	17		2	1		3
34		19	3		22	22		14	1		15
33		30	2		32	32		31			31
32		47	11		58	58		51	2		53
31		81	29		110	110		87	3		90
30		59	24		83	83		71			71
29		67	14		82	82		82	1		83
28		72	20	1	93	93		55	6		61
27		54	14		68	68		68	2	37	107
26		73	12		85	85		68	10		90
25		116	11		127	127	116	5		11	129
24		95	10		106	106		39		1	52
23		53	3		59	59		25			53
22		56	3		63	63		49			97
21		35	8	1	46	46		52	1		111
20		44	4		53	53		48	1	1	61
19		20			31	31		60			60
18 AND LESS		156	37	911	2,192	3,410	212	80	909	2,077	3,403
TOTAL		1,091	227	914	2,195	4,564	1,135	275	911	2,135	4,582
HUDSON RIVER, N. Y., DEEPWATER IN UPPER BAY, N. Y. TO WATERFORD, N. Y. INTERNAL											
					UPBOUND					DOWNBOUND	
33					1	1		1			1
32			2		2	2					
31			2		2	2					
30			3		3	3					
29			3		3	3		1			1

GOVERNMENT'S EXHIBIT 004

NEW YORK, N. Y., DISTRICT

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TRIPS AND DRAITS OF VESSELS

HARBOR OR WATERWAY	DIRECTION						DIRECTION					
	SELF PROPELLED VESSELS			NON SELF PROPELLED VESSELS			SELF PROPELLED VESSELS			NON SELF PROPELLED VESSELS		
DRAFT (FEET)	PASSENGER AND DRY CARGO	TANKER	TUGBOAT OR TUGBOAT	DRY CARGO	TANKER	TOTAL	PASSENGER AND DRY CARGO	TANKER	TUGBOAT OR TUGBOAT	DRY CARGO	TANKER	TOTAL
HUDSON RIVER, N. Y., DEEPWATER IN UPPER BAY, N. Y., TO WATERFORD, N. Y. INTERNAL--(CONTINUED)												
				UPBOUND						DOWNBOUND		
28		3	1		1	5				6		6
27		2		207	1	210						
26		3			1	4						
25		5				5						
24		2			1	3		2				2
23		1			4	5		1				1
22					25	25						
21	3	2			75	80	1					1
20		2			61	63	3					3
19		1			59	60						
18 AND LESS	6,136	912	26,005	13,516	3,974	50,543	5,917	863	25,991	13,850	4,063	50,724
TOTAL	6,139	943	26,006	13,723	4,203	51,014	5,921	868	25,991	13,856	4,068	50,724
HUDSON RIVER, N. Y., MOUTH OF SPUYTEN DUYVIL CREEK (HARLEM RIVER) TO WATERFORD, N. Y.												
				UPBOUND						DOWNBOUND		
36		16			1	17		1				1
35	1	5				6		1				1
34	1	3				4		1				1
33		2				2		1				1
32	11	13				24		1				1
31	11	31				42	13	3				16
30	5	27				32	5					5
29	3	17			1	21	1	1				2
28	3	23	2		1	29	1	4				5
27	1	16			1	18	3	2		43		48
26	3	14			1	18	6	6		11	1	24
25	34	14				48	9	5		8		22
24	46	9		1	1	57	1	10		1		12
23	32	2			6	40	9	23				32
22	22	2		1	24	49	22	45				67
21	15	10			60	85	31	57				88
20	5	2			47	54	26	10	1			37
19	5	1			64	70	25	4			5	24
18	5	12			156	173	23	3		20	2	48
17	4	66	46	4	76	196	19	4	48	11		62
16	4	66	12		125	207	14	9	14	66	4	107
15	1	54	28		365	448	5		26	4	2	37
14	2	96	156	29	224	507		1	155	24	7	167
13	1	67	1,101	5	500	1,674	1	1,082	3	10		1,096
12 AND LESS	298	174	5,714	8,274	1,561	18,021	2,307	542	5,031	8,091	2,863	18,834
TOTAL	513	742	7,059	8,314	3,214	19,842	2,520	735	6,357	8,282	2,874	20,768
TARRYTOWN HARBOR, N. Y.												
				INBOUND						OUTBOUND		
13			6		2	8			5			5
12			15		5	20			15			15
11		1	94		15	110			94			94
10			129	380	11	520			132	4		136
9			7		7	14			7			7
8			49	103	2	154			49			49
7			4			4			4			4
6 AND LESS			3		1	4		10	3	470	43	526
TOTAL		1	307	483	43	834		10	309	474	43	636
ROCKY HARBOR, N. Y.												
				INBOUND						OUTBOUND		
15					2	2						
14					6	8						
13		2	21		22	45			21		1	1
12		1	10		5	16			10			10
11			2		1	3			2			2
10		4	19	8	3	34			17	567		584
9		1	34			35			34			34
8			9		1	10		2	9			11
7			22			22		4	21			25
6 AND LESS				589	1	590		2		28	44	74
TOTAL		8	117	597	43	765		8	114	595	45	762
PORT OF ALBANY, N. Y.												
				INBOUND						OUTBOUND		
32	1	15			1	17		3				3
31	1	30				31	12	3				15
30		26				26	4					4
29		13			1	14		1				1
28		12	2		1	16		4				4
27	1	14			1	16		3				3
26	2	13			1	16		3			1	6
25	10	11				21		1				1
24	36	9			1	46		8				9
23	30	2			6	38		7				14
22	21	2			21	44	15	40				55
21	15	6			43	66	22	49				71
20	3	2			31	36	23	8	1			32
19	5	1			55	61	23	4			4	31
18	5	10			27	42	17	3			2	22
17	1	32	19		35	67	2	4	22			28

GOVERNMENT'S EXHIBIT PP.

83d Congress, 1st Session

House Document No. 22b

Approved R&H Act 3 Sept 1954
Pub. Law 780 83d Cong., Chap 1264 2nd Sess.
H.R. 9859

HUDSON RIVER, N. Y.

LETTER

FROM

THE SECRETARY OF THE ARMY

TRANSMITTING

A LETTER FROM THE CHIEF OF ENGINEERS, UNITED STATES ARMY, DATED JANUARY 23, 1953, SUBMITTING A REPORT, TOGETHER WITH ACCOMPANYING PAPERS AND ILLUSTRATIONS, ON A REVIEW OF REPORTS ON AND PRELIMINARY EXAMINATION AND SURVEY OF HUDSON RIVER, N. Y., WITH A VIEW TO DETERMINING IF IT IS ADVISABLE TO PROVIDE A DEEP-WATER CHANNEL BETWEEN HUDSON AND TROY, REQUESTED BY A RESOLUTION OF THE COMMITTEE ON RIVERS AND HARBORS, HOUSE OF REPRESENTATIVES, ADOPTED ON MARCH 21, 1945; HUDSON RIVER, N. Y., FROM ALBANY TO NEW YORK CITY, AND HUDSON RIVER, AT OR NEAR NORTH GERMANTOWN, COLUMBIA COUNTY, N. Y., AUTHORIZED BY THE RIVER AND HARBOR ACT APPROVED ON MARCH 2, 1945



AUGUST 3, 1953.— Referred to the Committee on Public Works and ordered to be printed, with nine illustrations

UNITED STATES
 GOVERNMENT PRINTING OFFICE
 WASHINGTON : 1953

GOVERNMENT'S EXHIBIT PP

HUDSON RIVER, N. Y.

REPORT OF THE CHIEF OF ENGINEERS, UNITED STATES ARMY

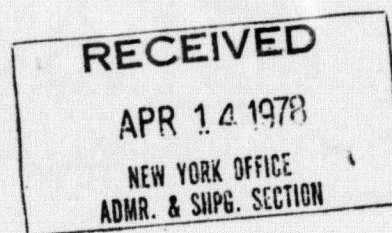
DEPARTMENT OF THE ARMY,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington 25, D. C., January 23, 1953.

Subject: Hudson River, N. Y.
To: The Secretary of the Army.

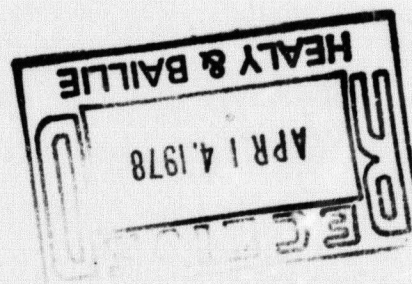
1. I submit herewith for transmission to Congress the report of the Board of Engineers for Rivers and Harbors in response to resolution of the Committee on Rivers and Harbors of the House of Representatives, adopted March 21, 1945, requesting the Board to review the reports on Hudson River, N. Y., submitted in House Document No. 350, 68th Congress, 1st session, and previous reports, with a view to determining if it is advisable to provide a deep-water channel between Hudson and Troy. It is also in review of reports by the district and division engineers on preliminary examination and survey of Hudson River, N. Y., from Albany to New York City, and Hudson River, at or near North Germantown, Columbia County, N. Y., authorized by the River and Harbor Act approved March 2, 1945.

2. After full consideration of the reports secured from the district and division engineers, the Board recommends modification of the existing project for Hudson River, N. Y., to provide for a channel 600 feet wide from New York City to Kingston and thence 400 feet wide to Albany, with widening at the bends; a turning basin 700 feet wide and 1,200 feet long at Albany; and two anchorages, one near Hudson and one near Stuyvesant, each with a width of 400 feet and an average length of 2,400 feet; with depths of 32 feet in soft material and 34 feet in rock; all generally in accordance with plan 1 of the district engineer and with such modifications thereof as in the discretion of the Chief of Engineers may be advisable; at an estimated cost to the United States of \$30,700,000 for new work and \$170,000 annually for maintenance in addition to that now required; provided local interests agree to: (a) furnish, without cost to the United States, all necessary lands, easements, rights-of-way, and suitable spoil-disposal areas for the new work and for subsequent maintenance when and as required; (b) hold and save the United States free from damages due to construction and maintenance of the improvements; (c) provide depths commensurate with the channel depth in the approaches and berths at terminals to serve the commerce which would move on the improvement; (d) construct and maintain a suitable bulkhead on the east side of the proposed turning basin or permit dredging of a slope that would otherwise be required; (e) provide and maintain at the port of Albany, in addition to facilities heretofore provided, sufficient storage and handling facilities for accommodation of prospective commerce, when and as required; and (f) continue,

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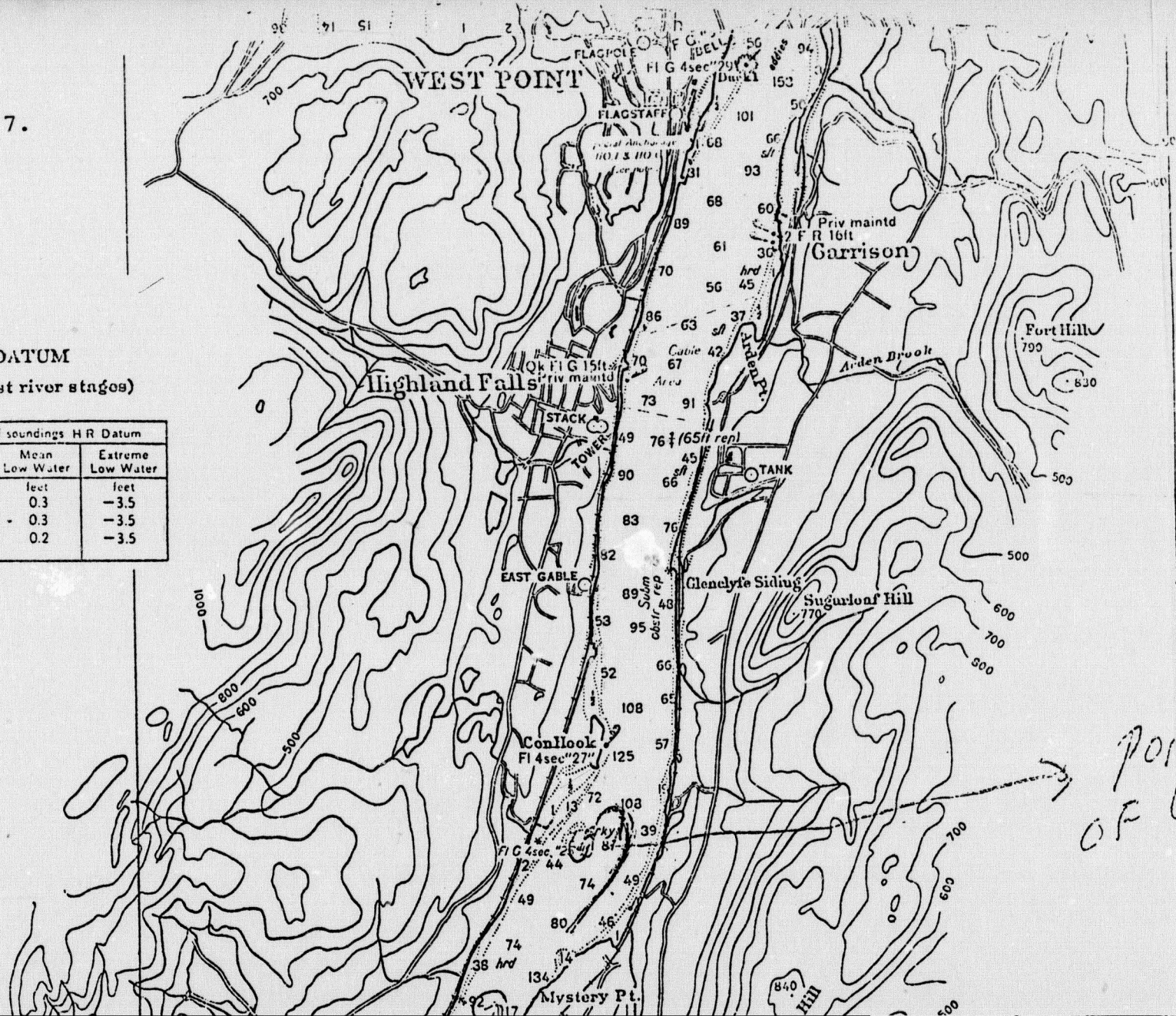


RED STAR'S EXHIBIT 7.

AT HUDSON RIVER DATUM
(Mean low water during lowest river stages)

Place	TIDAL INFORMATION Height referred to datum of soundings H R Datum			
	Mean High Water	Mean Tide Level	Mean Low Water	Extreme Low Water
Peekskill	feet 3.2	feet 1.7	feet 0.3	feet -3.5
West Point	3.0	1.6	0.3	-3.5
Newburgh	3.0	1.6	0.2	-3.5

(573)



Point
of Grounding

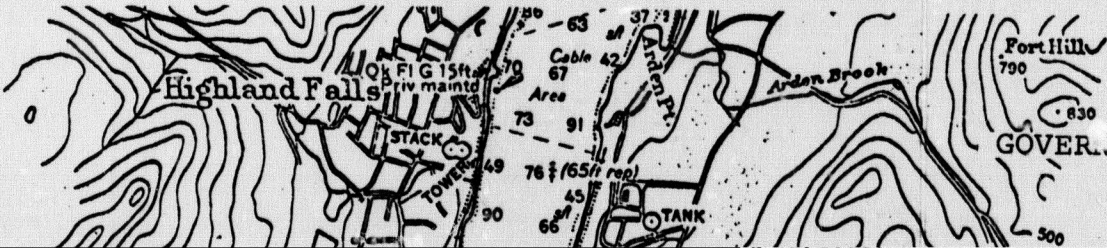
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Cont
Wd
Brd
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Hwy
(274)

AT HUDSON RIVER DATUM
(Mean low water during lowest river stages)

TIDAL INFORMATION

Place	Height referred to datum of soundings H R Datum			
	Mean High Water	Mean Tide Level	Mean Low Water	Extreme Low Water
Peekskill	feet 3.2	feet 1.7	feet 0.3	feet -3.5
West Point	feet 3.2	feet 1.7	feet 0.3	feet -3.5



Red star
~~4~~ 4

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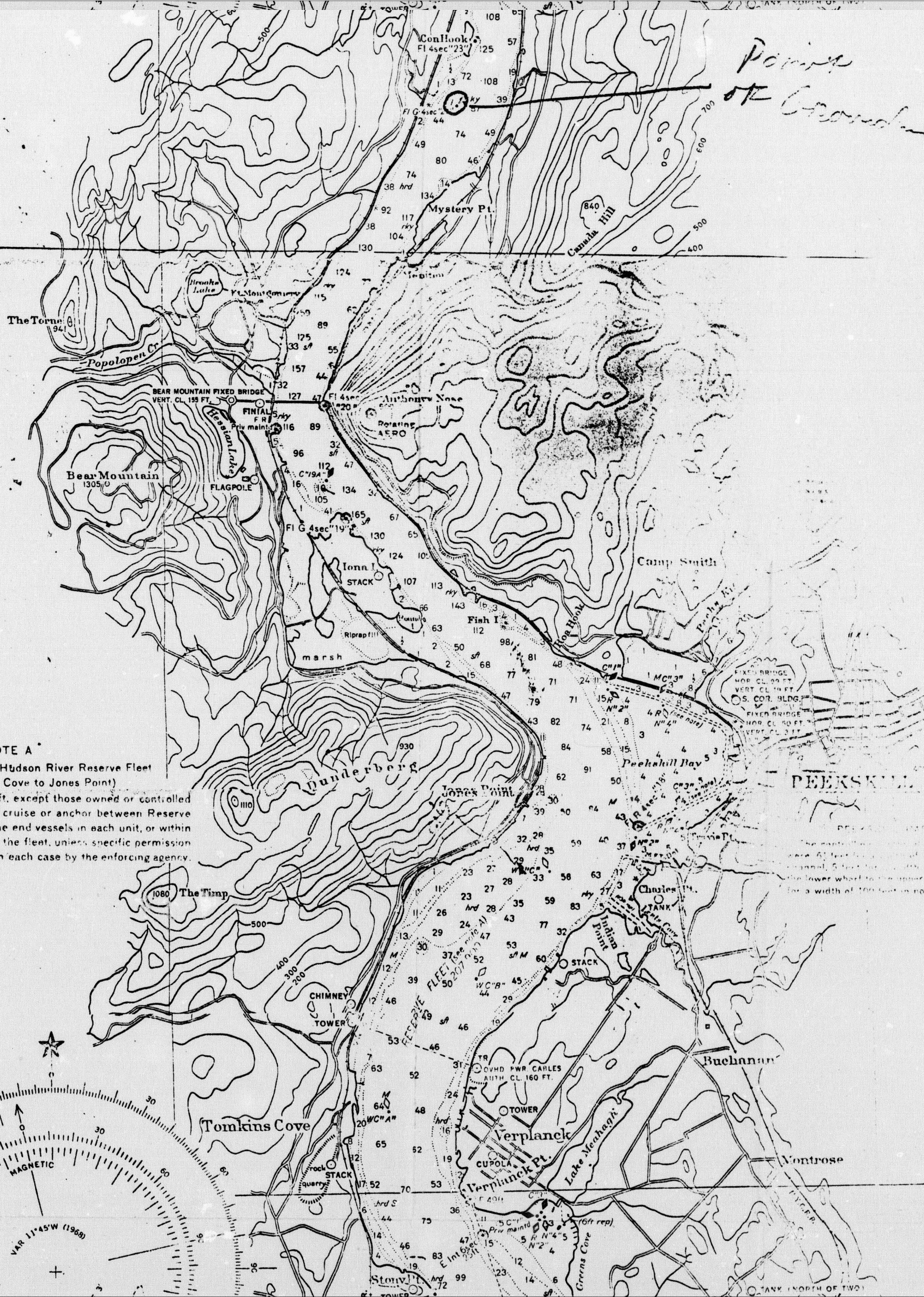
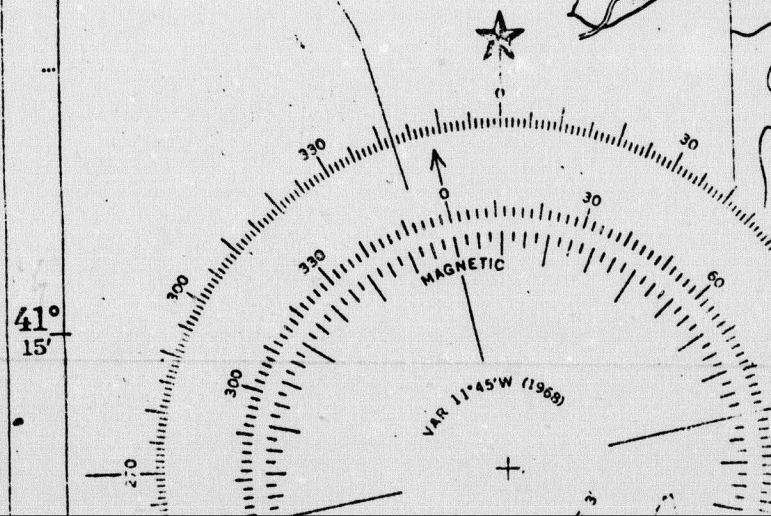
Point
of branching



NOTE A

Maritime Administration Hudson River Reserve Fleet
(vicinity Tompkins Cove to Jones Point)

No vessels or other watercraft, except those owned or controlled by the U.S. Government, shall cruise or anchor between Reserve Fleet units, within 500 feet of the end vessels in each unit, or within 500 feet of the extreme units of the fleet, unless specific permission to do so has first been granted in each case by the enforcing agency.



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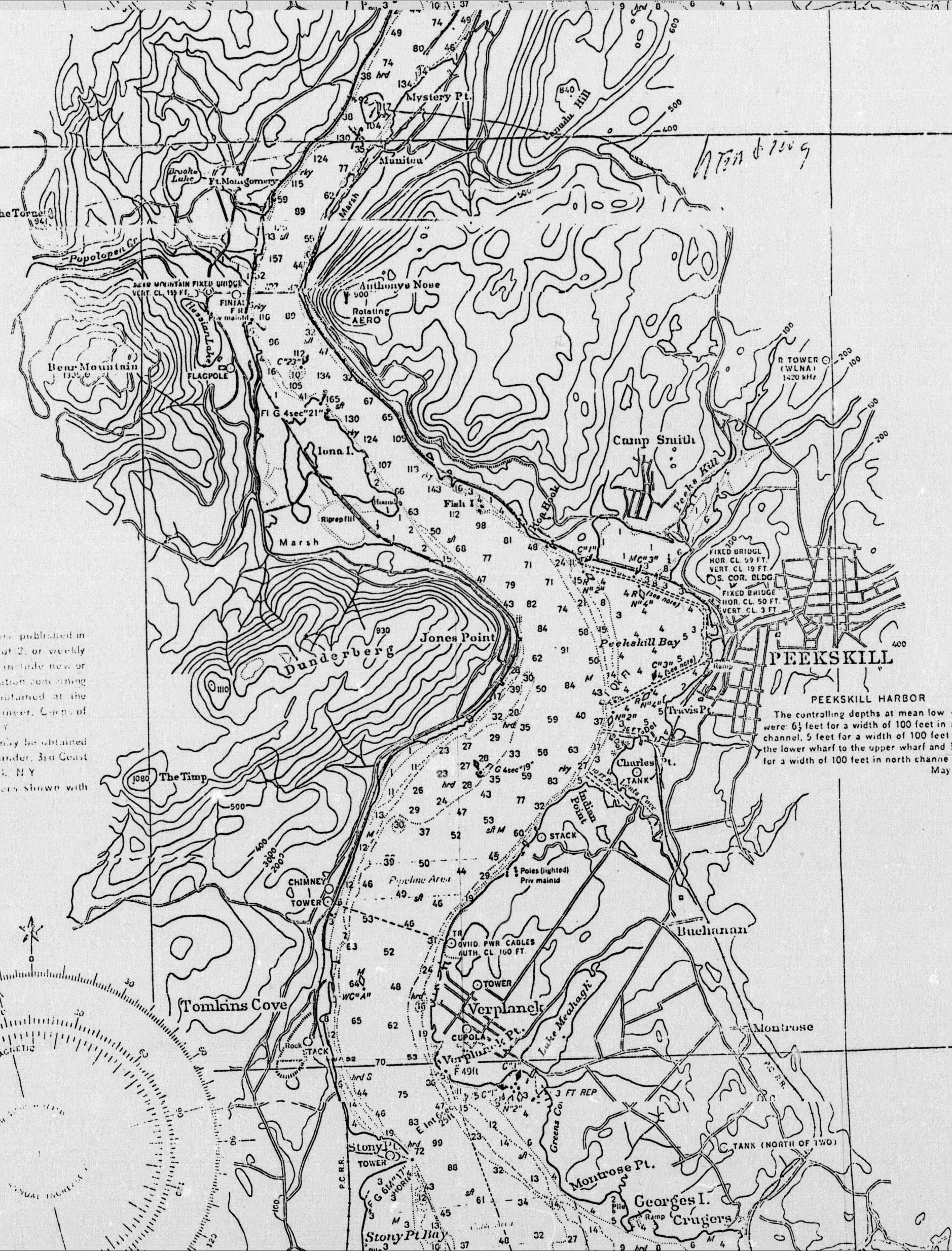
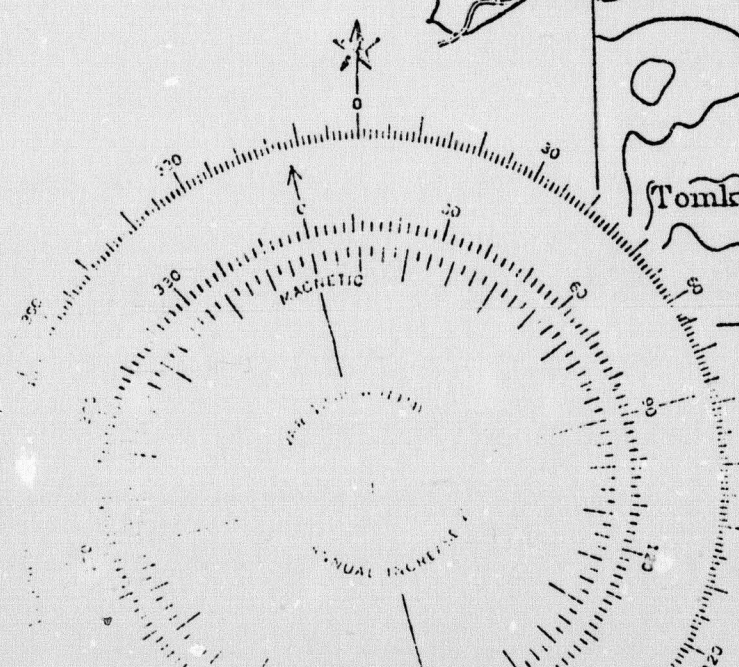
NOTE A

Navigation regulations are published in Chapter 7, U.S. Coast Pilot 2, or weekly Notice to Mariners, which include new or revised regulations. Information concerning the regulations may be obtained at the Office of the District Engineer, Coastal Engineer, New York, N.Y.

Anchorage regulations may be obtained at the Office of the Commander, 3rd Coast Guard District, New York, N.Y.

Refer to section numbers shown with red numerals.

PEEKSKILL HARBOR
The controlling depths at mean low water were: 6½ feet for a width of 100 feet in south channel, 5 feet for a width of 100 feet from the lower wharf to the upper wharf and 3 feet for a width of 100 feet in north channel.
May 1957



C
S
D
P
S

55'

41° 15'

450,000

(Mean low water during lowest river stages)

Place	Height referred to datum of soundings M R Datum			
	Mean High Water	Mean Tide Level	Mean Low Water	Extreme Low Water
Peekskill	3.2	1.7	0.3	-3.5
West Point	3.0	1.6	0.3	-3.5
Newburgh	3.0	1.6	0.2	-3.5

(973)

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GOVERNMENT'S

EXHIBIT

U. S. DIST. COURT
S. D. OF N. Y.

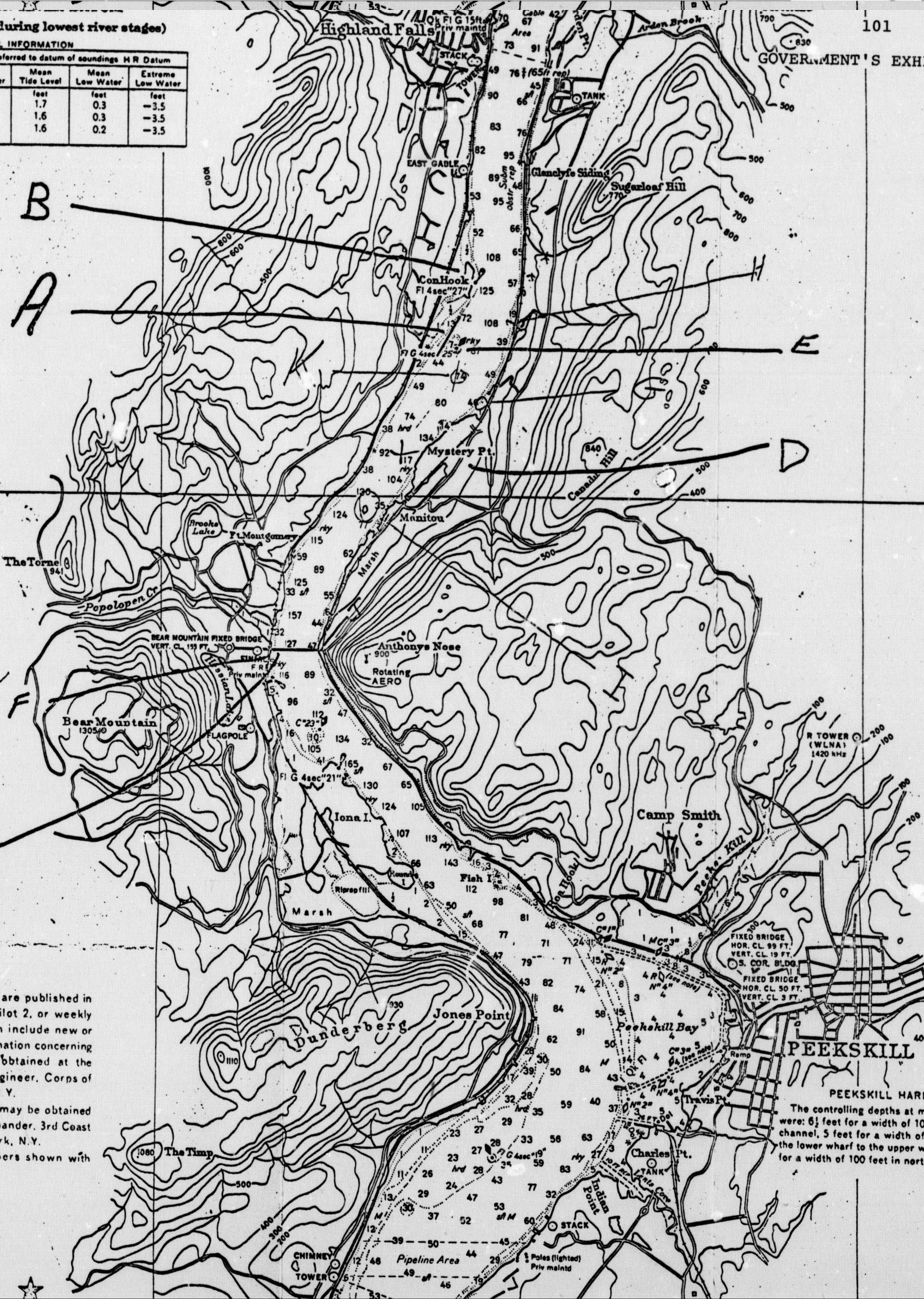
*marked for
identification
as
Government
Exhibit 4
Bany Hanco
March 25, 1976*

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 2, or weekly Notice to Mariners which include new or revised regulations. Information concerning the regulations may be obtained at the Office of the District Engineer, Corps of Engineers in New York, N.Y.

Anchorage regulations may be obtained at the Office of the Commander, 3rd Coast Guard District in New York, N.Y.

Refer to section numbers shown with area designation.



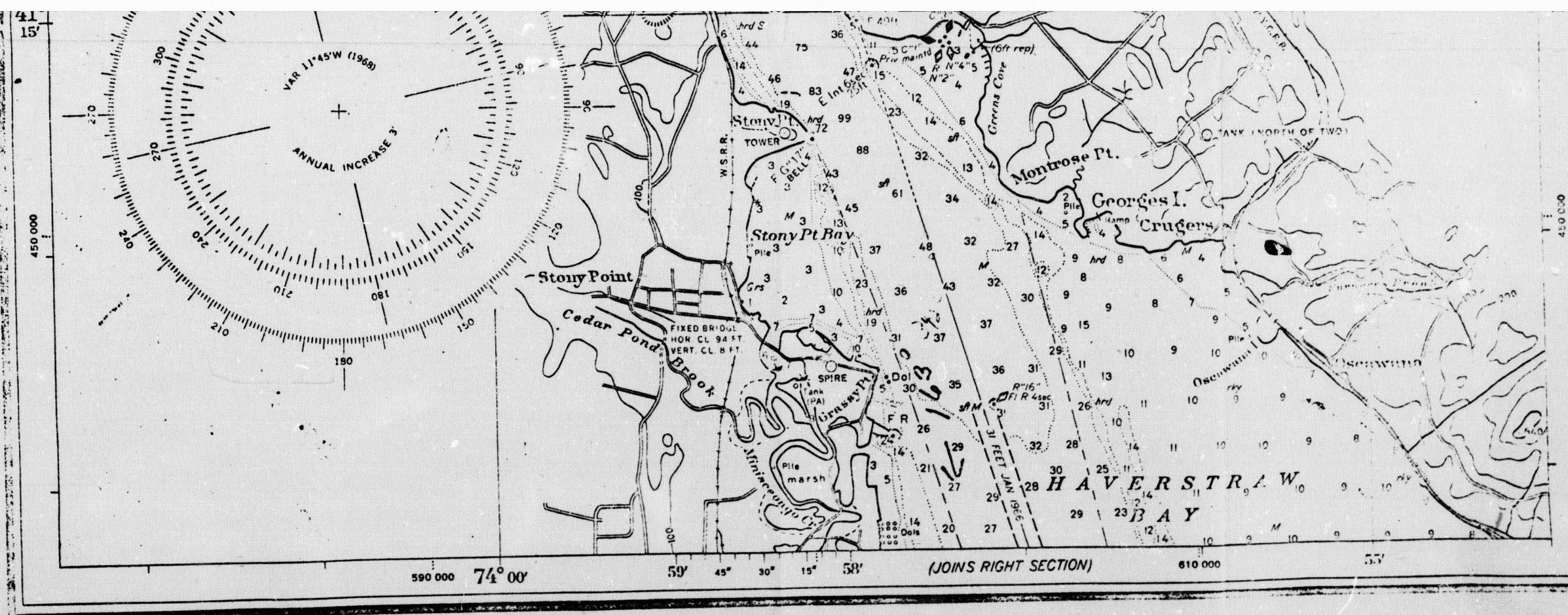
GOVERNMENT'S EXHIBIT DD.

101

PEEKSKILL HARBOR

The controlling depths at mean low water were: 6 1/2 feet for a width of 100 feet in south channel, 5 feet for a width of 100 feet from the lower wharf to the upper wharf and 8 feet for a width of 100 feet in north channel.

May 1957



9th Ed., Nov. 22/69 (corr. thru N.M. 47/69)

282

PRICE \$1.00

U.S. DEPT. OF THE ARMY
ENGINEERING CENTER
CORPUS CHRISTI, TEXAS

